

Running head: DISRUPTIVE BEHAVIORS IN MINORITY STUDENTS

EFFECTIVENESS OF THE CHANCE JARS GAME AND MYSTERY MOTIVATORS TO
REDUCE DISRUPTIVE BEHAVIORS IN MINORITY STUDENTS LIVING IN POVERTY

by

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CERTIFICATION OF PROJECT WORK

We, the undersigned, certify that this project entitled Effectiveness of the Chance Jars Game and Mystery Motivators to Reduce Disruptive Behaviors in Minority Students Living in Poverty by Jillian K. Stephenson, Candidate for the Degree of Master of Science in Education, Curriculum and Instruction Inclusive, is acceptable in form and content and demonstrates a satisfactory knowledge of the field covered by this project.

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Abstract

Disruptive behaviors negatively affect the learning environment by taking time away from academic instruction (McKissick, 2012). Studies have indicated that these behaviors are prevalent in high risk schools, characterized by high rates of poverty among their students (Webster-Stratton, Reid, & Stoolmiller, 2008). Furthermore, 56% of students in high-poverty schools with large minority populations reported that disruptive behavior by other students get in the way of their learning (Webster et al., 2008). The current study examined the effectiveness of the “Chance Jars” game and Mystery Motivators on the disruptive behaviors of minority students living in poverty. The study was conducted in a second grade classroom in a small metropolitan school district in Western New York during afternoon mathematics and listening and learning instruction. Results of the study indicated a mean percent change of -2.6% from the first intervention phase to the second of target student disruptive behaviors during mathematics; only one target student showed a decrease of disruptive behaviors from the first intervention phase to the second during listening and learning (-23.66%). The present study was completed with a mean fidelity score of 94.05%.

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Disruptive behaviors affect the learning environment by taking time away from academic instruction (McKissick, 2012). It has been shown that students with disruptive behaviors distract their peers and put additional stress on their teacher (Burke, Oats, Ringle, Fichtner, & DelGaudio, 2011). Studies have indicated that these behaviors are prevalent in high risk schools, characterized by high rates of poverty among their students (Webster-Stratton, Reid, & Stoolmiller, 2008). Furthermore, 56% of students in high-poverty schools with large minority populations reported that disruptive behavior by other students get in the way of their learning (Webster et al., 2008).

Disruptive behavior is identified as any behavior that is not included in on-task categories, such as academically unrelated verbal behaviors (e.g. call-outs, talking to peers, distracting noises) or motoric behaviors (e.g. out-of-seat, throwing objects) (Lannie & McCurdy, 2007). Disruptive behaviors are also defined as the children's attempt to harm, verbally negate, or not pay attention in the completion of a task assigned by their parents, teacher, or another adult authority figure (Boelter, Wacker, Call, Ringdohl, & Kopelman, 2007). Specific examples of disruptive behavior often vary depending on the tolerance of the teacher in question.

When students display disruptive behaviors, it interferes with their education as well as the education of their peers (Higgins, Williams, & McLaughlin, 2001). Researchers observing four elementary schools found that disruptive behaviors that interrupted the flow of classroom instruction occurred two times every ten minutes (Reinke, Lewis-Palmer, & Merrell, 2008). In addition, research has shown that an average of 18% of class time is spent on discipline matters (Partin, 2009). Disruptive behaviors are associated with a host of negative outcomes, such as low academic achievement, low standardized test scores, low school attendance, substance abuse, and depression (Dishion, Stormshak, & Siler, 2010; Embry, 2002; Kowalewicz & Coffee, 2014).

These behaviors have also been shown to create feelings of tiredness and lack of efficacy among teachers because they hinder the teaching-learning process and can inhibit academic performance among students (Babyak, Luz, & Kamps, 2000; Tingstrom, 1994; Tingstrom, Sterling-Turner, & Wilczynski, 2006; Van Lier, Van der Sar, & Crijnen, 2004). According to the Public Agenda (2004), 76% of teachers reported they would be better able to teach if student behavior problems were not so prevalent, and another 33% reported considering quitting the profession because of difficulty with classroom discipline. Research has shown that approximately 10% of students display disruptive behaviors, and that percentage increases for students with additional risk factors (Benedict, Horner, & Squires, 2007). Using research-based interventions or strategies to reduce disruptive behaviors are integral to successful classroom management.

There has been a plethora of research on strategies to reduce disruptive behaviors in the elementary classroom. Many of these strategies have been shown to improve behaviors among students. What is missing from the research is the effectiveness of these strategies with minority students living in poverty.

Review of Literature

Poverty

According to the United States Census Bureau (2013), “if a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty” (para. 1). The United States Census Bureau (2013) uses money income before taxes but does not include capital gains or noncash benefits such as public housing, Medicaid, and food stamps in determining poverty. In 2010, the poverty threshold was \$22,314 for a family of four (Mishel, Bivens, Gould, & Shierholz, 2012). Mishel et al. (2012) state that it is widely accepted that the official poverty rate is inadequate in capturing the earnings of those who find it difficult to make

ends meet; therefore many cite “twice poverty” rate which is double the threshold (\$44,628 in 2010 for a family of four) to provide a more accurate measurement of material deprivation. In 2010, the “twice poverty” rate was 33.9% (Mishel et al., 2012).

Kusmin (2008) stated that the overall poverty rate was 12.5%, yet 18% of children younger than 18 years of age were considered poor. Fast forwarding to 2012, Addy and Wight (2012) found that 15.1% of the country’s population was considered poor and 21% or 15.5 million of all its children younger than 18 years of age were poor. Furthermore, in 2014, Jiang, Ekono, and Skinner found that while children account for 24% of the U.S. population, they represent 34% of all people living in poverty (Jiang, Ekono, & Skinner, 2014). Jiang, Ekono, and Skinner also ascertained that about 22% of all children in the U.S., or about 16 million children, are among the nation’s poorest families (Jiang, Ekono, & Skinner, 2014).

Nearly half (44.3%) of the poor are in deep poverty; living on half or less of the official poverty line (Mishel et al., 2012). In a recent report, The United Nations International Children’s Emergency Fund (UNICEF) found that the United States had more children living in relative poverty - defined as living in a household in which the disposable income is less than 50 percent of the national median - than all but one other economically advanced countries, Romania (The United Nations Children’s Fund, 2013).

Effects of Poverty on Children

The experience of poverty does not occur in isolation but rather as a cumulative effect that includes family-level structure, social, psychological, and general life stressors (e.g. loss of a job, eviction from home, inability to pay bills) (Aber, Jones, & Raver, 2007). Children of poverty often grow up with inadequate resources and are shown to have lower levels of intellectual functioning and higher levels of emotional and behavioral impairments (Aber, Brooks-Gunn, &

Duncan, 2000). McLoyd (1998) observed that the economic disadvantage that is associated with poverty or low income adversely affects IQ, school achievement, and socio-emotional functioning. Furthermore, it is evident that the more chronic and persistent the experiences of poverty and the earlier in life it occurs, the more the adverse the effects on children's development (McLoyd, 1998).

In a recent report, the National Center on Family Homelessness (2014) found that in New York State, the top health problems of children below 100 percent poverty to be: (1) One or more chronic conditions (17%), (2) Asthma (14%) and, (3) Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder (6%) (The National Center on Family Homelessness at American Institutes for Research, 2014). According to Shonkoff et al. (2012), toxic stress in early childhood can lead to permanent changes in the structure and function of the brain; these brain alterations can create a weak foundation for later learning, behaviors, and health. When infants, children, and adolescents are exposed to neglectful, threatening, frightening, harmful, and traumatic experiences, they are at a greater risk for poor behavioral and medical outcomes as adults (Felitti, Anda, Nordenberg, Williamson, Spitz, & Edwardset al., 1998; Felitti & Anda, 2010).

Furthermore, children who are poor in early life (birth to age 2) are 30% less likely to complete high school than children who are poor later on in childhood (Ratcliffe & McKernan, 2012). Studies conducted by Felitti et al. (1998) and Felitti and Anda (2010) demonstrate the progression from early adverse experiences to social, emotional, and cognitive impairments; to adolescent risk behaviors; to adult diseases, disability, and social problems; and finally to premature death. Possibly a better term to refer to those in poverty is “economically disadvantaged” (Ackerman, Brown, & Izard, 2004).

Children from economically disadvantaged families are at risk of frequent changes in residence and maternal intimate relationships, parent substance abuse and antisocial behaviors (Ackerman et al., 2004). Persistent economic disadvantage is also associated with partner discord and divorce, with the chronic irritability and distress of parents, and with parent feelings of powerlessness and futility (Conger, Wallace, Sun, Simons, McLoyd, & Brody, 2002). Children in poverty are five times more likely to live in divorced or separated households (U.S. Census Bureau, 2000).

The number of children living with only one parent has tripled since 1960 from about 9 percent to 27 percent (United States Census Bureau, 2015). Poverty rates are highest for families headed by single women, especially if they are Black or Hispanic (The National Center on Family Homelessness, 2014). The National Poverty Center stated in 2010, 32% of households headed by single women were poor; compared to 16% of households headed by single men and 6% of married couple households (National Poverty Center, 2010). Moreover, the poverty rate for single-mother families rose to 39.6% in 2013, nearly five times more than the rate (7.6%) for married-couple families (National Women's Law Center, 2013).

When children are exposed too often to intense and destructive parental conflicts it disrupts their adjustment and may also sensitize them to subsequent conflicts which will limit their development of self-regulatory skills (e.g. ability to delay gratification, pay attention, control impulsivity) (El-Sheikh, Ballard, & Cummings, 1994; McCoy, Raver, & Sharkey, 2014; Raver, Blair, & Willoughby, 2013; Holt, Buckley, & Whelan, 2008). Buckner, Beardslee, and Bassuk (2004) concluded through their research that “exposure to violence in any of its various manifestations appears to be one of the most detrimental experiences a child can have” (p.420). Moreover, Holt, Buckley, and Whelan (2004) found that children and adolescents living with

domestic violence are at increased risk of experiencing emotional, physical and sexual abuse, of developing emotional and behavioral problems, and of increased exposure to the presence of other adversities in their lives. Another negative effect of persistent adversity is that it may impede behavioral recovery after an initial period of maladjustment and accentuate behavioral problems (Caspi & Moffitt, 1991; Hetherington & Stanley-Hagen, 1999).

Economically disadvantaged students are likely to be exposed to violence and substance abuse, which may increase the likelihood of their receiving school sanctions (Brantlinger, 1991). Moreover, frequent school sanctions appear to significantly increase the risk of academic underperformance (Davis & Jordan, 1994), leading these students feeling frustrated and having low self-confidence, resulting in a contribution to a higher rate of negative behaviors or school disruptions (Miles & Stipek, 2006). In addition, violence-exposed students are likely to suffer from anxiety, irritability, stress, and hyper-vigilance (Gorman-Smith & Tolan, 1998). These conditions can have a negative effect on student behavior and can result in an increase in discipline referrals (Gorman-Smith & Tolan, 1998).

Poverty and the Minority Populations

Poverty and risks are unequally distributed across the different races and ethnicities in the United States (Roy & Raver, 2014). Wight, Chau, and Aratani (2010) found that greater proportions of African American (35%) and Latino (31%) children live in poverty than White (11%) and Asian (15%) children. The risk factors associated with poverty are more prevalent among racial and ethnic minorities than White families (Hatch & Dohrenwend, 2007). The relationships of the risk factors to children's outcomes also vary by race and ethnicity. For example, 44% of African American families were characterized as being in "deep poverty and single", while only 16% of Latino and White families fell into the same category (Roy & Raver,

2014). Another example of this variation is that a larger portion of Latino families (28%) were characterized as being in the “deep poverty and crowded” categories of poverty than African Americans (13%) (Roy & Raver, 2014).

More than three in four black children experience poverty at some point during their childhood, with 37% of them considered to be persistently poor (Ratcliffe & McKernan, 2010). Black children are also 2.5 times more likely than White children to ever experience poverty and 7 times more likely to live in persistent poverty (Ratcliffe & McKernan, 2010). In other words, about 5% of White children are persistently poor while almost 40% of black children are persistently poor (Ratcliffe & McKernan, 2012). Persistent poverty is identified as living in poverty for at least nine years of childhood (Ratcliffe & McKernan, 2010). Black children are also the most likely of all the races to live in concentrated poverty, with 45% living in communities where more than 30% of people are in poverty, compared to 12% of White children (The Annie E. Casey Foundation, 2012). Children in concentrated poverty communities are more likely to experience harmful levels of stress and exhibit severe emotional and behavioral problems, while parents are more likely to face food hardship and lack health insurance (The Annie E. Casey Foundation, 2012).

Immigrant children have significantly higher rates of poverty and participation in public assistance programs than native children do (Borjas, 2011). Poverty and participation in public assistance programs also vary depending on place of birth (foreign or U.S. born), parents (immigrant or native), and national origin (Borjas, 2011). Exposure to a disadvantaged background may imply different things for different groups of children, particularly because immigrant experience introduces distinct factors (e.g. temporary family separation due to immigration laws) that native (parents also born in the U.S.) children do not have to deal with

(Borjas, 2011). Borjas (2011) created three groups to define immigrant children: (1) children who have one immigrant parent (mixed parents), (2) foreign-born (two immigrant parents), and (3) U.S. born children (two immigrant parents). According to Borjas (2011), in 2009 the poverty rate of U.S. born children with two immigrant parents was 28.5% while the poverty rate for foreign-born children was 31.6%. Borjas (2011) also found that foreign-born children have the highest poverty rates but U.S. born children with immigrant parents have the highest public assistance program participation.

Furthermore, poverty rates are different among some of the largest immigrant national origin groups. In 2009, only 6-7% of immigrant children from India or the Philippines lived in households below the poverty level, whereas nearly 40% of immigrant children in households from Mexico or the Dominican Republic (Borjas, 2011). There is also a large difference among immigrant national origin groups that participate in public assistance programs. For example, in 2009, about 14.6% of Indian immigrant children, 21.5% of Philippine immigrant children, and more than 60% of Mexican and Dominican immigrant children participated in such programs (Borjas, 2011).

High Risk Schools

The National Center for Education Statistics (NCES) examined the growing trend of low income students in the United States' public schools in a recent report. In the report, NCES (2015) stated that in 1989, less than 32% of the nation's public school students were low income. The number of low income students has just been increasing since. By 2000 the number of low income students increased to 38%, by 2006 it was up to 42%, and by 2011 it increase to 48% (National Center for Education Statistics, 2015). Finally, the number of low income students in public schools raised from 49.6% in 2012 to a staggering national average of 51% in 2013

(National Center for Education Statistics, 2015). The state that serves the highest number of low income students in their public schools is Mississippi at an astounding 71% (National Center for Education Statistics, 2015). In contrast, the state with the lowest number of low income students in their public schools is New Hampshire at 27% (National Center for Education Statistics, 2015). New York ranks in at a total of 48% low income students in public schools (National Center for Education Statistics, 2015).

Furthermore, in the 2011-2012 school year, 19% of public school students attended a high-poverty school, compared with 12% in the 1999–2000 school year (National Center for Education Statistics, 2014). Contrastly, in the 2011–2012 school year, 28% of public school students attended a low-poverty school, compared with 45% in the 1999–2000 school year (National Center for Education Statistics, 2014).

At-risk schools are likely to serve a high proportion of minority and low-income students, have poor student achievement, and if they are high schools, have a low graduation rate (National Partnership for Teaching in At-Risk Schools, 2005). The effects of economic disadvantages described in the previous paragraphs are characteristics included in at-risk schools.

Group Contingency Interventions

There are three categories of group contingencies; dependent, independent, and interdependent (Theodore, Bray, Kehle, & DioGuardi, 2003). Dependent group contingencies entail class-wide access to the reward dependent on the behavior of one single student or a small targeted group of students meeting the criteria (Theodore et al., 2003; Reinhardt, 2009). In an independent group contingency the same criteria and reward are applied to the whole class, but each student must independently meet the criteria to receive the reward (Theodore et al., 2003; Reinhardt, 2009). Interdependent group contingencies involve the group as a whole meeting the

criteria to receive the reward (Theodore et al., 2003; Reinhardt, 2009). Group contingencies have been found to be one of the most effective means of reducing inappropriate classroom behaviors (Stage & Quiroz, 1997).

Group contingencies are attractive and viable options for teachers who want to avoid many of the limitations of individual contingency programs for numerous reasons (Reinhardt, 2009). First, they are economically feasible in regard to time and resources due to the whole class being treated as one unit; either the entire class is rewarded or not (Reinhardt, 2009). Second, students are not individually singled out for intervention (Reinhardt, 2009). Third, they provide recognition and rewards for students who already engage in the desired behaviors (Reinhardt, 2009). Lastly, they enhance socialization and cooperative behaviors among peers, as they are working toward a common goal (Reinhardt, 2009).

An additional benefit of intertwining fates is that it can cause diverse students to encourage or assist each other so that the group can receive the reinforcement or reward (Slavin, 1987). Group contingencies can also be particularly beneficial for students who rarely earn reinforcers for their individual behavior, as all students can share in the excitement of achieving their goal when whole groups are rewarded (Cashwell, Skinner, Dunn, & Lewis, 1998).

Group contingencies have also been used in a variety of settings for a number of dependent variables such as academic performance; pro-social behaviors; disruptive behaviors; classroom noise levels; stealing; and homework completion and accuracy (Reinhardt, 2009). Gresham and Gresham (1982) found that both interdependent and dependent group contingencies were more effective than independent contingencies in decreasing disruptive behaviors. Furthermore, as interdependent group contingencies are applied to an entire group,

jealousy and peer rejection are avoided because all students either receive the reward or not (Skinner, Cashwell, & Dunn, 1996).

Group contingencies also have a number of limitations or disadvantages. These limitations or disadvantages are related to the target behaviors, the criterion level set, and the positive consequences (Skinner et al., 1996). When certain behaviors are targeted to be monitored, students may improve those behaviors; however, other desired behaviors can decrease or other undesired behaviors may increase (McKissick et al., 2010). Likewise, if students fail to meet the set criteria early on in the intervention, they may realize that it is impossible to earn the positive reward (McKissick et al., 2010). This could produce a number of negative side effects, including: (a) the group may stop performing the desired target behaviors, (b) the group may react negatively and become angry or disappointed and/or, (c) problem behaviors may increase (McKissick et al., 2010). In addition, if the consequences or rewards are weak or not meaningful for some students, the success in improving problem behaviors universally will be in jeopardy of failing (McKissick et al., 2010). To address these limitations or disadvantages, contingency components can be randomized as indicated in the following sections.

Randomization of Group Contingency Components

Recently many researchers have begun to incorporate randomized components to group contingencies (Reinhardt, 2009). Instead of target behaviors, criterion for reward, and positive consequences being determined and announced to students prior to the intervention, these contingency components can be randomly selected from a pool of options at the end of the intervention period (e.g. if the class calls out less than the randomly selected number of times, all students in the class receive access to the randomly selected reward) (McKissick et al., 2010). In

doing so, some advantages have become apparent. For example, by randomizing the criteria for reinforcement, students will need to adjust all target behaviors being monitored because they do not know exactly which behavior will be selected for assessment (Reinhardt, 2009). In addition, by randomizing reinforcers, students have a decreased chance of purposefully interfering with a contingency program because they do not like the reward chosen (Reinhardt, 2009). Moreover, students who do not meet the criteria and fail to obtain the reward, do not exhibit discontentment because the reinforcers were not previously disclosed (Reinhardt, 2009). Similarly, having unknown or randomly chosen target behaviors and criteria may encourage students to maintain their performance across target behaviors throughout the length of the contingency program (Kelshaw-Levering et al., 2000).

Randomized components in group contingency strategies have been used in numerous settings to improve academic performance for spelling, mathematics, English, and reading (McKissick et al., 2010). Several researchers have also randomized one or two contingency components and a few have randomized two contingency components (McKissick et al., 2010).

Mystery Motivators

According to Rhodes, Jenson, and Reavis (1992), unknown reinforcers or “Mystery Motivators” can be useful when utilizing group contingencies. Mystery Motivators are valued rewards (objects or activities) that are selected from a list of reinforcements previously determined to be desirable by the students (Kehle, 2000). Mystery Motivators are designed to deliver unknown but appealing rewards to students who engage in proper or desired behaviors (Murphy, 2007). Mystery Motivators increase the anticipation for the reward and allow the reward to be unknown (Kehle, 2000). Kowalewicz and Coffee (2014) found that Mystery Motivators are effective in decreasing disruptive behaviors. More specifically, Kowalewicz and

Coffee (2014) discovered that Mystery Motivators produce moderately greater and more consistent reduction in disruptive behavior than known reinforcers. Many variations of the Mystery Motivator have been used successfully in both elementary and secondary students (Rhode, 2010).

When students are unaware of the consequent reward, they may improve the target behaviors because each could potentially be working for a high-quality reinforcer (Kelshaw-Levering et al., 2000). Mystery Motivators and rewards also allow for more equality among peers because all members of the class will receive the same reward (Robichaux & Gresham, 2014). An additional benefit of using Mystery Motivators or rewards is that the teacher has the freedom to reward the class with a desired activity (Robichaux & Gresham, 2014; Kelshaw-Levering et al., 2000). Activity rewards are often free of cost and already part of the classroom environment (e.g., extra recess, free time at the end of the day) (Robichaux & Gresham, 2014). By randomizing various components of the contingency, a teacher can keep the rewards fresh and can protect students from harassment if they fail to meet the set criterion (Hulac & Benson, 2010).

Chance Jars

The “Chance Jars” strategy was developed by Theodore, Bray, Kehle, and Jenson (2001) to reduce the disruptive behaviors of five adolescent students with serious emotional behavior disorders (Theodore, Bray, Kehle, & Jenson, 2001). The “Chance Jars” strategy is a mixed group contingency that integrates dependent, independent, and interdependent group contingencies to reduce disruptive behaviors and improve classroom rule following (Rhode, 2010).

This strategy has many variations, however generally there are three jars involved. The jars are labeled as follows: (1) Group Jar, (2) Student Jar, and (3) Mystery Motivator Jar (Rhode,

2010). The “group jar” contains pieces of paper that dictate the type of group contingency that will be randomly chosen (Whole Class, One Student, All Who Meet It, and Wild-Card). The “student jar” contains slips of paper with each student’s name. Finally, the “Mystery Motivator jar” contains slips of paper with various reinforcers or rewards written on them. When “whole class” is drawn, all students in the class must meet the criteria to receive the reward (Rhode, 2009). If “one student” is drawn, the teacher then draws a name from the second jar (“Student Jar”) to determine which student’s behavior will be looked at. The chosen student must meet the criteria for the whole class to receive the reward (Rhode, 2009). When the “all who meet it” option is drawn, only the students who meet the criteria will receive the reward, while those who did not will not earn the reward (Rhode, 2009). Finally, if the “wild-card” option is chosen, all students in the class receive the reward, regardless of whether they met the criteria or not (Rhode, 2009). This option is used to keep the students motivated when they have a bad day and have exceeded the reward criterion for acceptable rule infractions or disruptive behaviors (Rhode, 2009).

The “Chance Jar” strategy also incorporates the opportunity to add a fourth jar called the “Rules Number Jar” or “Goals Jar”. This jar allows for the number of acceptable rule infractions or number of disruptive behaviors displayed to be randomized as well as the other components (Rhode, 2009). Variations of the “Chance Jars” strategy have been used in both general education elementary and secondary classroom settings as well as with students with emotional and behavioral disorders (Rhode, 2010).

Methodology

Participants and Setting

The present study was conducted in a small (299 students) metropolitan school district in Western New York. Within the school, 258 students (86%) are eligible for free lunch, 11 students (4%) receive reduced price lunch, and 45 students (15%) are limited English proficient. The school in which the present study was conducted has a diverse population. In the school, 127 students (42%) are White, 102 students (34%) are Hispanic or Latino, 19 students (6%) are Black or African American, 46 students (15%) are Multiracial, 5 students (2%) are American Indian or Native Alaskan, and no students are Asian or Native Hawaiian/Other Pacific Islander.

The current study was conducted in a second grade classroom that had fourteen students. Of the fourteen students; six students were Hispanic, two students were Multiracial, and six students were White. No students currently had a 504 plan or Individualized Education Plan (IEP). Of the fourteen students, only one was considered on grade level. Four students had a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD); two on medication, one without medication, and one that does not consistently take medication. The classroom also had one student diagnosed with Autism, who was not on any medications or receiving any type of services or supports. Two students received English as a Second Language (ESL) services; one twice a week and the other only once a week. The students were seated at round tables rather than individual desks. The current study took place during the afternoon in the Mathematics and Listening and Learning portions of the school day.

Dependent Variables

There are three dependent variables in the current study: (a) Off-task behavior, (b) inappropriate vocalizations, and (c) general non-compliance behavior. Off-task behavior is

defined as “eyes and head oriented away from work materials or the teacher and/or manipulation of non-work-related materials” (Kelshaw-Levering, Sterling-Turner, & Henry, 2000).

Inappropriate vocalizations are defined as: “(a) any verbal statement made to a peer(s) without explicit teacher permission to talk to that peer(s) and/or (b) calling out answers to teacher questions without raising one’s hand or being called on by the teacher” (Kelshaw-Levering et al., 2000). General non-compliance behavior is defined as “not responding or inappropriately responding to teacher instruction or request within five to ten seconds of the instruction or request” (Kelshaw-Levering et al., 2000).

Daily frequency counts were collected for the entire class, based on the three target behaviors, using a collection data sheet. To ensure anonymity, the researcher assigned numbers to each student. The researcher recorded the frequency with which students engaged in each target behavior by making tallies next to the numbers assigned to students each time they exhibited the target behaviors. This procedure was performed for all students in the class.

Independent Variable

The independent variable in the present study is called “Chance Jars”. The “Chance Jars” intervention consists of: (a) interdependent and dependent group contingencies with randomized components, (b) pre-established reward criteria, and (c) unknown rewards to function as Mystery Motivators. The “Chance Jars” intervention strategy was used to randomize the contingency components (target behaviors, students, and rewards).

The first jar was labeled “Behavior”. This jar was used to randomize the target behaviors (off-task behavior, inappropriate vocalizations, and general non-compliance). This jar contained 20 pieces of paper with names of the target behaviors; five pieces of paper for each target behavior (i.e., “Off-task”, “Inappropriate Vocalization”, or “Comply within 5-10 seconds”), as

well as five pieces of paper with the word “All” written on them. The pieces of paper that say “All” indicated that all target behaviors are being monitored. Whichever target behavior that was randomly picked by the teacher, is the target behavior that was monitored for that day. The target behavior that was chosen was *not* revealed to the class; rather the class was reminded of all target behaviors that *could* be monitored.

The second jar was labeled “Names”. This jar was used to randomly select target students. Within this jar, there was a piece of paper with each student’s name on it. There was also five pieces of paper with “Whole Class” and “Wild-Card” written on them. The teacher picked a piece of paper from this jar to determine which student will be monitored for that day based on the previously selected target behavior (“Behaviors” Jar). If the selected student met the criterion, then the whole class was rewarded. When the “Whole Class” piece of paper was selected, an interdependent group contingency was in place. In this situation the whole class would need to meet the criterion to receive the reward. When “Wild-Card” was drawn, the whole class received the reward regardless of whether they met the criterion or not. Similar to the first jar (“Behaviors”), students were not told who was being monitored; but again reminded of the target behaviors being looked at and that it could be any of them being watched.

The third jar was labeled as “Goals”. This jar was used to determine the number of disruptive behaviors allowed for the day. As with the other jars, the students were not told in advance the number of infractions allowed until the end.

The fourth and final jar was labeled as “Rewards”. This jar was used to determine the “consequences” or “rewards” that the class received if the criterion was met. A student reward inventory was conducted prior to the creation of this jar in order to determine which rewards would be relevant to the students. The teacher only picked from the “Rewards” jar when the

target student or the whole class met the criterion. Within this jar, there were 20 pieces of paper with student chosen rewards. Whichever reward was randomly selected, was shared by the entire class at the most immediate and practical time.

In addition to the 20 pieces of paper indicating rewards, were five pieces of paper labeled “Mystery Motivator”. Each time the “Mystery Motivator” paper was chosen, the students received an envelope with a letter in it. The letter was a letter from a word or phrase that built up to a whole class reward. Each time they choose a Mystery Motivator from the rewards jar a new letter was added. In the present study the Mystery Motivator reward was “ice cream” to indicate an ice cream party. The first letter to be given would be “i”, then “c”, and so on, until the word “ice cream” had been spelled out. Once the whole word is completed, the whole class will receive the reward at the most convenient and practical time. Regardless of what reward is randomly picked, the class was never told whose behavior was being monitored on days when criteria were not met.

Design and Procedures

The current study was conducted in an A-B-A-B design to determine the effectiveness of the “Chance Jars” intervention on reducing disruptive behaviors of minority students living in poverty in the elementary school setting. This research design is efficient in building functional relationships by showing that pupil performance changes, when and only when, the intervention is given or removed (Kennedy, 2005). The first baseline was conducted by examining student disruptive behaviors under a typical or normal instructional day.

Baseline I.

During the initial baseline sessions, the researcher monitored students’ disruptive behaviors and kept track of them on a data collection monitoring sheet (Appendix A). This

baseline determined what time of day, or during what class, the students tended to be more disruptive. This information helped determine when the intervention would be conducted. During baseline sessions, students worked under whatever reward system the teacher or school already had in place to reward proper behaviors. During these baseline sessions, students were asked to complete a Student Reward Inventory (Appendix B) to determine valid and appropriate rewards to be used in the intervention phases.

After the initial baseline data was gathered the students were introduced to the “Chance Jars” game. The teacher explained to the class that they would be playing the “Chance Jars” game in class for the next few weeks, during the designated time that was determined through observation during the initial baseline data collection. The teacher explained the rules of the game and drew sample pieces of paper from each jar to further explain how the game is played (Appendix C). Students were also involved by demonstrating examples of inappropriate or disruptive behaviors for each target behavior.

Intervention I.

The first intervention stage began the following school day after the game was initially explained to students. The teacher again explained the rules and parameters of the “Chance Jars” game to refresh the students before the instructional period began. A typical session operated as follows: First, the teacher began class by choosing a piece of paper from Jar #1 or “Behaviors” jar (target behaviors). Next, the teacher chose a piece of paper from Jar #2 or “Names” jar (student names). Finally, the teacher chose a piece of paper from Jar #3 or the “Rules Number” jar (number of disruptive behaviors allowed). The teacher did not tell the class what behavior, which student, or what number of allowed infractions were selected. The teacher continued teaching a normal lesson to the students. While the teacher was teaching she was monitoring

student disruptive behaviors by making a check mark on her paper whenever she observed the target student(s) not demonstrating the target behavior. The researcher was also observing all of the students and documenting their behaviors, as well. This information was helpful in determining whether the game helped reduce disruptive behaviors for all students when they do not know who is being observed. Halfway through the session, the teacher gave the students a reminder of appropriate behaviors. At the end of the lesson the teacher and researcher compared monitoring sheets to establish inter-rater reliability and to determine whether the class received the reward for that day.

After intervention data was collected, the “Chance Jars” intervention was removed for five days (Baseline II). Once again the teacher taught under normal teaching conditions and students worked under whatever reward system was in place prior to the intervention. Data was again collected on the target disruptive behaviors during baseline conditions. Following the second baseline period, the “Chance Jars” intervention was again re-introduced (Intervention II). The second intervention period was conducted exactly as the first intervention session.

Following the final intervention session, both the students and teacher were asked to complete a survey on the “Chance Jars” game. The student surveys (consumer satisfaction) were anonymous (Appendix D). The survey was based on a modified version of a 5-point Likert-type scale that was developed by Bray and Kehle (1996). The survey was used to determine: (a) students’ satisfaction with the “Chance Jars” game, (b) how much the students liked the randomization of the target behaviors, criterion, and rewards, and (c) the overall effect of the intervention on their disruptive behaviors. The teacher survey (teacher acceptability) was given to determine: (a) the ease of implementation, (b) degree of effectiveness on student disruptive behaviors, and (c) perceived sustainability (Appendix E).

To ensure that the “Chance Jars” intervention was implemented as intended, independent fidelity checks were done during the intervention sessions. The researcher observed the teacher implementing “Chance Jars” game and recorded the number of procedural steps that were present and absent (Appendix F). There was also a spot available for the researcher to write notes about the absence of procedural steps. Fidelity of implementation was then calculated as the number of steps present divided by the total number of possible multiplied by 100. This number was the accuracy indicator for the implementation of the “Chance Jars” game.

Results

Analysis of the data revealed an overall decrease of disruptive behaviors among the target students from the initial baseline data to both the intervention phases. Shown in Figure 1, student number one had the most dramatic decrease of disruptive behaviors with a percent change of -81.40% after the first mathematics intervention phase. In contrast, student number twelve had the lowest percent change of -3.16%. Three of the target students did not show any decrease in disruptive behaviors post intervention phase one.

After the second intervention phase, students number one and two had the biggest decrease in disruptive behaviors with a percent change of -51.35% and -58.10% respectively, while student number nine’s percent change was a mere -1.32% after this second mathematics intervention phase. During phase two of the mathematics intervention, only two of the target students exhibited no decrease in disruptive behaviors.

Figure 1.

Student	Math Baseline 1 Total	Math Intervention 1 Total	Percent Change 1	Math Baseline 2 Total	Math Intervention 2 Total	Percent Change 2
1	43	8	-81.40%	37	18	-51.35%
2	127	55	-56.70%	179	75	-58.10%
3	40	40		58	88	51.72%
9	94	173	84.04%	227	224	-1.32%
11	57	36	-36.84%	25	17	-32%
12	95	92	-3.16%	150	92	-38.67%
13	51	89	74.51%	178	107	-36.89%
14	33	24	-27.27%	49	50	2.04%

Shown in figure 2, all target students showed a decrease in disruptive behaviors during the first intervention phase for listening and learning (L & L). However, students number one and two had the biggest decrease of disruptive behaviors with percent changes of -68.72% and -62.90% respectively. The smallest percent change was -11.11% from student number three. In contrast, only one target student showed a decrease of disruptive behaviors during the second phase; student number one's notable percent change of -92.08%. No data for listening and learning (L & L) intervention phase was available for student number eleven, as she attends an English as a Second Language (ESL) class at that time.

Figure 2.

Student	L & L Baseline 1 Total	L & L Intervention 1 Total	Percent Change 1	L & L Baseline 2 Total	L & L Intervention 2 Total	Percent Change 2
1	38	12	-68.42%	101	8	-92.08%
2	186	69	-62.90%	85	122	43.53%
3	63	56	-11.11%	90	136	51.11%
9	151	96	-36.45%	175	228	30.29%
11						
12	157	116	-26.12%	70	153	118.57%
13	111	49	-55.86%	152	205	34.87%
14	90	37	-58.89%	29	57	96.55%

The overall mean percent change for the first intervention phase for mathematics was -41.07%. The overall mean percent change for the second intervention phase for mathematics was -43.67%. This shows that from the first intervention to the second intervention there was a -2.6% decrease in the target student disruptive behaviors. The overall mean percent change for the first intervention phase for listening and learning was -45.68%. An overall mean percent change for the second intervention phase for listening and learning cannot be calculated, as only one student showed a decrease in behaviors. The only student who did show a decrease had a percent change of -23.66% from the first intervention to the second intervention.

After the final intervention phase, the participants completed a consumer satisfaction survey. Figure 3 shows the participants' mean scores for each question included on the survey. The survey was based on a modified version of a 5-point Likert-type.

Figure 3.

Survey Question	Mean Score
1. How much did you enjoy the ““Chance Jars” game?	4.46
2. How much did you like using Jar #1 to determine the behavior goal for each day?	4.15
3. How much did you enjoy using Jar #2 to figure out whose behavior would be monitored each day?	4.54
4. How much did you like using Jar #3 to figure out how many behaviors were allowed to happen to still earn the reward for that day?	3.77
5. How much did you like using Jar #4 to find out what rewards the class earned that day?	4.92
6. How much did you enjoy the Mystery Motivator reward?	4.46
7. How much did the Change Jar Game help you follow classroom rules?	3.62
8. Do you think the ““Chance Jars” game should be used in all classes in the day?	4.54
9. How fair was the ““Chance Jars” game to everyone in the class?	3.62
10. How important is it to follow the rules of the classroom?	4.58

Closer analysis of each question showed the disparities in the frequency in which each response was chosen. For instance, on question number four, four participants (30.8%) responded between “not at all” and “ok” and six participants (46.2%) indicated “a lot” to indicate how much they liked using Jar #3. On question seven, four participants (30.8%) responded “not at all” and eight participants (61.5%) chose “a lot” to indicate how much the “Chance Jars” game helped them follow the classroom rules. Lastly, on question nine, three participants (23.1%) chose “not fair at all” and seven participants (53.8%) chose “very fair” to indicate how fair they felt the “Chance Jars” game was to everyone in the class.

After the conclusion of the intervention, the cooperating classroom teacher also completed a teacher acceptability survey to share their feelings about the “Chance Jars” game and Mystery Motivators and whether they felt it helped their students behave better. The teacher survey was also based on a modified version of a 5-point Likert-type. Figure 4 depicts the teacher’s responses to the survey questions. The teacher survey also included an open-ended comment section where the teacher indicated that the “Chance Jars” game would be interesting to use from the beginning of the year, rather than for the limited time we had. The teacher also indicated that it was difficult to tally behaviors while teaching at the same time; this would be something that would take time to be consistent in doing on her own.

Figure 4.

Survey Question	Score
1. How easy was the “Chance Jars” game to implement?	4
2. How well did the “Chance Jars” game decrease your students’ disruptive behaviors?	3
3. How satisfied with the outcomes of the “Chance Jars” game were you?	4
4. Do you think that the “Chance Jars” game is something that you will continue to utilize?	4
5. How likely are you to recommend the “Chance Jars” game to a colleague?	4

Throughout the intervention, the researcher completed fidelity checklists on the implementation of the intervention by the classroom teacher. The researcher completed these checklists during mathematics and listening and learning, for a total of two per day, ten per week, and twenty at the end of the intervention. The first mathematics intervention phase had a mean fidelity score of 94.4% and the first listening and learning intervention phase had a mean fidelity score of 93%. The second mathematics intervention phase had a mean fidelity score of

94.4% and the second listening and learning intervention phase also had a mean fidelity score of 94.4%. The overall fidelity score for the first intervention phase was 93.7% and 94.4% for the second intervention phase. Finally, the mean fidelity score for the entire intervention was 94.05%.

Discussion

The present study's purpose was to determine the effectiveness of the "Chance Jars" intervention and Mystery Motivators on decreasing the disruptive behaviors of minority students living in poverty in the elementary school setting. Upon analyzing the results, the data indicates that the "Chance Jars" game with Mystery Motivators was effective in reducing disruptive behaviors among minority students living in poverty. During the mathematics intervention phases, the results showed that there was a -2.6% decrease in the target student disruptive behaviors. Only one target student had a decrease of disruptive behaviors during the listening and learning intervention phases; a percent decrease of -23.66% from the first intervention to the second intervention. While the effectiveness of the intervention is evident, there were a number of factors that influenced the success and limited how well the intervention worked for these students.

The classroom that the current study took place in had a preponderance of disruptive behaviors exhibited throughout the day. The researcher observed these disruptive behaviors during the afternoon, right after lunch; where the number of disruptions generally increased from the morning's number. This classroom also had a significant number of students who were diagnosed with disabilities that often are paired with behavior problems. This characteristic was more evident in this classroom as a number of these participants were either not medicated or not consistently medicated.

By randomizing the group contingencies in the “Chance Jars” game, the researcher hoped to see the target students adjust all of their disruptive behaviors because they did not know which was being monitored. However, while collecting data, the researcher noticed that some of the target students would often act out to gain the attention of the researcher. Due to the randomization of the contingencies, not every student was chosen to be observed and given the chance for individual rewards. This caused a few students to become slightly disillusioned with the “Chance Jars” game.

The aspect of the intervention that the participants seemed to enjoy the most was the Mystery Motivator reward. When a reward was earned, the participants enthusiastically wished for the Mystery Motivator to be drawn from Jar #4, and cheered energetically when it was. At times, the participants would remember that they were being observed and remind their peers to behave so that they would have the chance to earn a Mystery Motivator reward. These actions by the participants is consistent with the research: (1) Group contingencies inspire diverse students to encourage or assist each other so that the group can receive the reinforcement or reward (Slavin, 1987), and (2) Group contingencies can be particularly beneficial for students who rarely earn reinforcers for their individual behavior, as all students can share in the excitement of achieving their goal when whole groups are rewarded (Cashwell, Skinner, Dunn, & Lewis, 1998).

The cooperating teacher’s survey comments were consistent with the advantages of group contingencies indicated in the research. Group contingencies are efficient in regard to time and resources, as the whole class are treated as one in regard to rewards earned (Reinhardt, 2009).

Limitations

The present study had a number of limitations. First, the researcher was only able to use one classroom population for the research. This class was small, with a total number of fourteen students and eight target students that fit the researcher's definition of minority living in poverty. Due to a lack of a large participant population, the results were limited. During the four weeks of research, there were a number of days where target students were absent from school, resulting in partial or missing data for that week.

During the initial baseline data collection, the school that research was being conducted in had two assemblies during the research time frame. During these assemblies, the researcher still collected data on student disruptive behaviors; however the students were remarkably well behaved throughout both events. This anomaly caused a small amount of baseline data to be skewed.

Another limitation was due to the timeline that the researcher had to work with. The school that research was conducted in had a spring vacation that split up the research timeline. The researcher was able to conduct the first three weeks of research before the vacation began. The final week of research and final intervention phase occurred the Monday the school was back from vacation. This had an impact on the effectiveness of the "Chance Jars" game on the students' behaviors. During the second intervention phase for listening and learning, only one student showed a decrease of disruptive behaviors.

The short amount of time allowed to conduct this research was also a limitation. In the consumer satisfaction surveys, the participants indicated that they liked playing the "Chance Jars" game, however some indicated that they thought the game was not fair to everyone in the class. The actual playing of the "Chance Jars" game only occurred during the second and fourth

weeks of research, which meant that not every student was able to earn a reward for their behaviors. This was also due to the randomization of all contingency components; some students' names were never drawn for the possibility to earn an individual reward. If there was more time to conduct this research, it is possible that all students would have been drawn for that chance.

Conclusion

Disruptive behaviors negatively affect the learning environment by taking time away from academic instruction (McKissick, 2012). Students who display these disruptive behaviors distract their peers and put additional stress on their teachers (Burke, Oats, Ringle, Fichtner, & DelGaudio, 2011). Disruptive behaviors are associated with a multitude of negative outcomes, such as low academic achievement, low standardized test scores, low school attendance, substance abuse, and depression (Dishion, Stormshak, & Siler, 2010; Embry, 2002; Kowalewicz & Coffee, 2014). Numerous researchers have studied the effectiveness of different strategies to reduce disruptive behaviors in the elementary, special education, and secondary settings.

The present research intended to fill the gap in the area of effective strategies to reduce disruptive behaviors in minority students living in poverty. The "Chance Jars" game and Mystery Motivators strategies were utilized to decrease the disruptive behaviors of minority students living in poverty in a small metropolitan Western New York elementary school. The results indicated that overall, the "Chance Jars" game and Mystery Motivators were effective in reducing the disruptive behaviors of minority students living in poverty.

Recommendations for Future Research

As this current study had a number of limitations, the researcher has recommendations for future research. To gain a better insight into how effective the "Chance Jars" game and

Mystery Motivators is with minority students living in poverty, a bigger participant population would be desired. Having more than one classroom using the intervention, researchers would have a better idea of how successful the intervention actually is. It would also be interesting to know what level of poverty each student is living at, to determine if it has an effect on the success of the intervention decreasing disruptive behaviors. Finally, future research would benefit from a longer study period. The current study lasted four weeks, with only two weeks actually implementing the intervention. A longer time period in which to study the relationship between the “Chance Jars” game and Mystery Motivators and decreased disruptive behaviors would give extremely important insight into its effectiveness with minority students living in poverty.

References

- Aber, J. L., Brooks-Gunn, J., & Duncan, G.J. (2000). *The consequences of growing up poor*. NY: Russell Sage Foundation.
- Ackerman, B. P., Brown, E. D., & Izard, C. E. (2004). The relations between persistent poverty and contextual risk and children's behavior in elementary school. *Developmental Psychology, 40*(3), 367-377. doi:10.1037/0012-1649.40.3.367
- Addy, S., & Wight, V. R. (2012, February). *Basic facts about low-income children, 2010: Children under age 18*. (NCCP Fact Sheet). New York, NY: National Center for Children in Poverty.
- The Annie E. Casey Foundation. (2012, February). Children living in America's high poverty communities (KIDS COUNT Data Snapshot). Retrieved from <http://www.aecf.org/resources/data-snapshot-on-high-poverty-communities/>
- Babiyak, A., Luze, G., & Kamps, D. (2000). The good student game: Behavior management for diverse classrooms. *Intervention in School and Clinic, 35*, 216-223.
- Baker, S. D., Lang, R., O'Reilly, M. (2009). Review of video modeling with students with emotional and behavioral disorders. *Education and Treatment of Children, 32*(3), 403-420.
- Benedict, E. A., Horner, R. H., & Squires, J. K. (2007). Assessment and implementation of positive behavior supports in preschools. *TECSE, 27*(3), 174-192.
- Blood, E., Johnson, J. W., Ridenour, L., Simmons, K., & Crouch, S. (2011). Using an iPod touch to teach social and self-management skills to an elementary student with emotional/behavioral disorders. *Education and Treatment of Children, 34*(3), 299-321.

- Brantlinger, E. (1991). Social class distinctions in adolescents' reports of problems and punishments in school. *Behavioral Disorders, 17*, 36-46.
- Bray, M. A., & Kehle, T. J. (1996). Self-modeling as an intervention for stuttering. *School Psychology Review, 25*, 358-369.
- Boelter, E. W., Wacker, D.P., Call, N. A., Ringdohl, J. E., & Kopelman, T. (2007). Effects of antecedent variables on disruptive behavior and accurate responding in young children in outpatient settings. *Journal of Applied Behavior Analysis, 40*(2), 321-326.
- Buckner, J. C., Beardslee, W. R., & Bassuk, E. L. (2004). Exposure to violence and low-income children's mental health: Direct, moderated, and mediated relations. *American Journal of Orthopsychiatry, 74*(4), 413-423. doi:10.1037/0002-9432.74.4.413
- Burke, R. V., Oats, R. G., Ringle, J. L., Fichtner, L. O., & DelGaudio, M. B. (2011). Implementation of a classroom management program with urban elementary schools in low-income neighborhoods: Does program fidelity affect student behavior and academic outcomes? *Journal of Education for Students Placed at Risk, 16*(3), 201-218. doi:10.1080/10824669.2011.585944
- Cashwell, C. S., Skinner, C. H., Dunn, M., & Lewis, J. (1998). Group reward programs: A humanistic approach. *Humanistic Education and Development, 37*, 47-53.
- Caspi, A., & Moffitt, T. E. (1991). Individual differences are accentuated during periods of change: The sample case of girls at puberty. *Journal of Personality and Social Psychology, 61*, 157-168.
- Conger, R. D., Wallace, L., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the

- family stress model. *Developmental Psychology*, 38(2), 179-193. doi:10.1037/0012-1649.38.2.179
- Davis, J. E., & Jordan, W. J. (1994). The effects of school context, structure, and experiences on African American males in middle and high schools. *Journal of Negro Education*, 63, 570-587.
- Dishion, T. J., Stormshak, E. A., & Siler, C. (2010). An ecological approach to intervention with high-risk students in schools: Using the Family Check-Up to motivate parents' positive behavior supports. In M. R. Shinn & H. M. Walker (Eds.), *Interventions for achievement and behavior problems in a three-tier model including RTI* (pp. 101-123). Bethesda, MD: National Association of School Psychologists.
- Elliott, S. N. (1988). Acceptability of behavioral treatments: Review of variables that influence treatment selection. *Professional Psychology: Research and Practice*, 19, 68-80.
- El-Sheikh, M., Ballard, M., & Cummings, E. M. (1994). Individual differences in preschoolers' physiological and verbal responses to videotaped angry interactions. *Journal of Abnormal Child Psychology*, 22, 303-320.
- Embry, D. D. (2002). The good behavior game: A best practice candidate as a universal behavioral vaccine. *Clinical Child and Family Psychology Review*, 5, 273-297.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of deaths in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245-258.
- Felitti, V. J., & Anda, R. F. (2010). The relationship of adverse childhood experiences to adult health, well-being, social function, and health care. In R. Lanius, E. Vermetten, & C. Pain

- (Eds.), *The effects of early life trauma on health and disease: The hidden epidemic*. New York, NY: Cambridge University Press.
- Gorman-Smith, D., & Tolan, P. H. (1998). The role of exposure to violence and developmental problems among inner-city youth. *Development and Psychopathology, 10*, 101-116.
- Gresham, F. M., & Gresham, G. N. (1982). Interdependent, dependent, and independent group contingencies for controlling disruptive behavior. *The Journal of Special Education, 16*, 101-110.
- Hamre, B. & Pianta, R. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*, 625-638.
- Hamre, B., & Pianta, R. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure?. *Child Development, 76*(5), 949-967.
- Hatch, S. L., & Dohrenwend, B. P. (2007). Distribution of traumatic and other stressful life events by race/ethnicity, gender, SES, and age: A review of the research. *American Journal of Community Psychology, 40*, 313-332. doi: 10.1007/s10464-007-9134-z
- Hetherington, E. M., & Stanley-Hagen, P. (1999). Divorce and the adjustment of children: A risk and resiliency perspective. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 40*, 129-140.
- Higgins, J. W., Williams, R. L., & McLaughlin, T. F. (2001). The effects of token economy employing instructional consequences for a third grade student with learning disabilities: A data based case study. *Education and Treatment of Children, 24*(1), 99-106.
- Hitchcock, C. H., Dorwick, P. W., & Prater, M. A. (2003). Video self-modeling intervention in school-based settings: A review. *Remedial and Special Education, 24*(1), 36-45, 56.

- Holt, S., Buckley, H., & Whelan, S. (2008). The impact of exposure to domestic violence on children and young people: A review of the literature. *Child Abuse & Neglect, 32*(8), 797-810. doi:10.1016/j.chiabu.2008.02.004
- Hulac, D. M., & Benson, N. (2010). The use of group contingencies for preventing and managing disruptive behaviors. *Intervention in School and Clinic, 45*(4), 257-262. doi:http://dx.doi.org/10.1177/1053451209353442
- Jiang, Y., Ekono, M., & Skinner, C. (2014). *Basic facts about low income children: Children under 6 years*. New York, NY: National Center for Children in Poverty.
- Kehle, T. E. (2000). A multi-component intervention designed to reduce disruptive classroom behavior. *Psychology in the Schools, 37*(5), 475-481.
- Kelshaw-Levering, K. H., Sterling-Turner, H. E., & Henry, J. R. (2000). Randomized interdependent group contingencies: Group reinforcement with a twist. *Psychology in the Schools, 37*(6), 523.
- Kennedy, C. H. (2005). *Single-case designs for educational research*. Boston: Allyn & Bacon/Pearson.
- Kowalewicz, E. A., & Coffee, G. (2014). Mystery Motivator: A Tier 1 classroom behavioral intervention. *School Psychology Quarterly, 29*(2), 138-156. doi:10.1037/spq0000030
- Kusmin, L. D. (2008). *Economic information bulletin* (Rural Development Research Report No. 40). Washington, DC: U.S. Department of Agriculture.
- Lannie, A. L., & McCurdy, B. L. (2007). Preventing disruptive behavior in the urban classroom: Effects of the good behavior game on student and teacher behavior. *Education & Treatment Of Children, 30*(1), 85-98.

- Ling, S., Hawkins, R. O., & Weber, D. (2011). Effects of a class wide interdependent group contingency designed to improve the behavior of an at-risk student. *Journal of Behavioral Education, 20*(2), 103-116. doi:10.1007/s10864-011-9125-x
- Lloyd, K. (2002). A review of correspondence training: Suggestion for a revival. *The Behavior Analyst, 25*, 57-73.
- McCoy, D. C., Raver, C. C., & Sharkley, P. (2014). *Child information processing and selective attention following exposure to chronic and acute neighborhood violence*. Manuscript submitted for publication.
- McKissick, C., Hawkins, R., Lentz, F., Hailley, J., & McGuire, S. (2010). Randomizing multiple contingency components to decrease disruptive behaviors and increase student engagement in an urban second-grade classroom. *Psychology in the Schools, 47*(9), 944-959.
- McLoyd, V. C. (1998). Socioeconomic deprivation and child development. *American Psychologist, 53*, 185-204.
- Meehan, B., Hughes, J., & Cavell, T. (2003). Teacher-student relationships as compensatory resources for aggressive children. *Child Development, 74*(4), 1145-1157.
- Miles, S. B., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low-income elementary school children. *Child Development, 77*, 103-117.
- Mischel, L., Bivens, J., Gould, E., & Shierholz, H. (2012). Poverty. *The State of Working America, 12th edition* (pp. 419-454). Ithaca, NY: Cornell University Press.
- Murphy, K. L. (2007). Interdependent group contingency and Mystery Motivators to reduce preschool disruptive behavior. *Psychology in the Schools, 44*(1), 53-63.

The National Center on Family Homelessness at American Institutes for Research. (2014).

America's youngest outcasts: A report card on child homelessness. Waltham, MA: The National Center on Family Homelessness at American Institutes for Research.

National Partnership for Teaching in At-Risk Schools. (2005). *Qualified teachers for at-risk schools: A national imperative.* Retrieved from

<http://www.learningpt.org/pdfs/tq/partnership.pdf>

National Poverty Center. (2010). *Poverty in the united states: Frequently asked questions.* Ann Arbor, MI: The University of Michigan. Retrieved from

<http://www.npc.umich.edu/poverty/>

National Women's Law Center. (2013). *National snapshot: Poverty among women & families.*

Retrieved from <http://www.nwlc.org/sites/default/files/pdfs/povertysnapshot2013.pdf>

Partin, R. L. (2009). *Classroom Teacher's Survival Guide : Practical Strategies, Management Techniques and Reproducibles for New and Experienced Teachers (3rd Edition).*

Hoboken, NJ, USA: Jossey-Bass. Retrieved from <http://www.ebrary.com>

Public Agenda. (2004). Teaching interrupted: Do discipline policies in today's public schools foster the common good? Retrieved from

http://www.publicagenda.org/files/teaching_interrupted.pdf

Ratcliffe, C., & McKernan, S. (2010). *Childhood poverty persistence: Facts and consequences*

(Brief No. 14). Retrieved from <http://www.urban.org/uploadedpdf/412126-child-poverty-persistence.pdf>

Ratcliffe, C., & McKernan, S. (2012, September). *Child poverty and its lasting consequence:*

Low-income working families. (Paper 21). Washington, DC: The Urban Institute.

- Rathvon, N. (2008). *Effective school interventions: Evidence-based strategies for improving student outcomes*. (2nd ed.). New York, NY: Guilford Press.
- Raver, C. C., Blair, C., & Willoughby, M. (2013). Poverty as a predictor of 4-year-olds' executive function: New perspectives on models of differential susceptibility. *Developmental Psychology, 49*, 292-304. doi: 10.1037/a0028343
- Reinhardt, D. J. (2009). Improving homework accuracy: Interdependent group contingencies and randomized components. *Psychology in the Schools, 46*(5), 471-488.
- Reinke, W. M., Lewis-Palmer, T., & Merrell, K. (2008). The classroom check-up: A class wide teacher consultation model for increasing praise and decreasing disruptive behavior. *School Psychology Review, 37*(3), 315-332.
- Rhode, G. (2010). *The Tough Kid Book*. Eugene, OR: Pacific Northwest Publishing.
- Robichaux, N. M., & Gresham, F. M. (2014). Research into practice: Differential effects of the Mystery Motivator intervention using student-selected and mystery rewards. *School Psychology Review, 43*(3), 286-298.
- Roy, A. L., & Raver, C. (2014). Are all risks equal? Early experiences of poverty-related risk and children's functioning. *Journal of Family Psychology, 28*(3), 391-400.
doi:10.1037/a0036683
- Shonkoff, J., Garner, A., Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics, Siegal, B., Dobbins, M., Earls, M., McGuinn, L., Pascoe, J., & Wood, D. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), 232-246.

- Skinner, C. H., Cashwell, C. S., & Dunn, M. S. (1996). Independent and interdependent group contingencies: Smoothing the rough waters. *Special Services in the Schools, 12*, 61-78.
- Skinner C. H., Skinner A. L., and Sterling-Turner, H. E. (2002). Best practices in contingency management: Application of individual and group contingencies in educational settings. *Best Practices in School Psychology, 5*, 817-830.
- Slavin, R. E. (1987). Cooperative learning: Where behavioral and humanistic approaches to classroom management meet. *Elementary School Journal, 88*, 29-37..
- Spilt, J. L., & Koomen, H. M. Y. (2009). Widening the view on teacher-child relationships: Teacher's narratives concerning disruptive versus non-disruptive children. *School Psychology Review, 38*, 86-101.
- Spilt, J. L., Koomen, H. M. Y., Thijs, J. T., & van der Leij, A. (2012). Supporting teachers' relationships with disruptive children: The potential of relationship-focused reflection. *Attachment & Human Development, 14*(3), 305-318.
- Stage, S. A., & Quiroz, D. R. (1997). A meta-analysis of interventions to decrease disruptive classroom behavior in public education settings. *School Psychology Review, 26*, 333-368.
- Stuhlman, M. W., & Pianta, R. C. (2002). Teachers' narrative about their relationships with children: Associations with behavior in classrooms. *School Psychology Review, 31*, 148-163.
- Theodore, L. A., Bray, M. A., Kehle, T. J., & Jenson, W. R. (2001). Randomization of group contingencies and reinforcers to reduce classroom disruptive behavior. *Journal of School Psychology, 39*(3), 267-277. doi:10.1016/S0022-4405(01)00068-1

- Theodore, L. A., Bray, M. A., Kehle, T. J., & DioGuardi, R. J. (2003). Contemporary review of group-oriented contingencies for disruptive behavior. *Journal of Applied School Psychology, 20*(1), 79-101. doi:10.1300/J008v20n01_06.
- Tingstrom, D. (1994). The good behavior game: An investigation of teacher's acceptance. *Psychology in the Schools, 31*, 57-65.
- Tingstrom, D. H., Sterling-Turner, H. E., & Wilcznski, S. M. (2006). The good behavior game: 1969-2002. *Behavior Modification, 30*, 225-253.
- The United Nations International Children's Emergency Fund. (2013). *Child well-being in rich countries: A comparative overview*. (Report No. 11). Florence, Italy: UNICEF Office of Research.
- U.S. Department of Commerce, Census Bureau. (2013). *How the census bureau defines poverty*. Retrieved from <http://www.census.gov/hhes/www/poverty/about/overview/measure.html>
- U.S. Department of Commerce, Census Bureau. (2015). *One in five children receive food stamps, census bureau reports*. Retrieved from <http://www.census.gov/newsroom/press-releases/2015/cb15-16.html>
- U.S. Department of Education, National Center for Education Statistics (2014). *Concentration of Public School Students Eligible for Free or Reduced-Price Lunch*. (NCES No. 2014083). Retrieved from <https://nces.ed.gov>
- U.S. Department of Education, National Center for Education Statistics (2015). *Common Core of Data*. Retrieved from <https://nces.ed.gov/>
- Van Lier, P., Van der Sar, R., & Crijnen, A. (2004). Preventing disruptive behavior in elementary school children: Impact of a universal classroom-based intervention. *Journal of Counseling and Clinical Psychology, 72*(3), 467-478.

- Webster-Stratton, C., Jamila Reid, M., & Stoolmiller, M. (2008). Preventing conduct problems and improving school readiness: Evaluation of the incredible years teacher and child training programs in high-risk schools. *Journal of Child Psychology and Psychiatry*, 49(5), 471-488. doi:10.1111/j.1469-7610.2007.01861.x
- Wight, V. R., Chau, M., & Aratani, Y. (2010). *Who are America's poor children? The official story*. New York, NY: National Center for Children in Poverty.
- Wright, R. A., & McCurdy, B. L. (2012). Class-wide positive behavior support and group contingencies: Examining a positive variation of the good behavior game. *Journal of Positive Behavior Interventions*, 14(3), 173-180.

Appendix A

Data Collection Monitoring Sheet: Disruptive Behaviors

“Chance Jars” Game

Date:	Observer:	Location/Subject:	
Time Started:	Time Ended:		
Students	Off Task	Inappropriate Vocalization	Non-compliance
1*			
2*			
3*			
4			
5			
6			
7			
8			
9*			
10			
11*			
12*			
13*			
14*			

Appendix B

Student Reward Inventory

“Chance Jars” Game

Directions: Put a checkmark or “X” next to 5 rewards you would like to earn.

- Stickers
- Free time with friends
- Lunch with the teacher
- Good note or call home
- Special snack
- Playground time
- Small toy
- Extra credit on a test
- No homework
- Books
- Pencils
- Listen to music while working
- Dance to music after lesson
- Stamp on hand
- Candy
- _____
- _____

Appendix C

Teacher Script

“Chance Jars” Game

Read or paraphrase the following:

Day One:

1. Class, today we are going to start playing a new game. This game is called the “Chance Jars” game. It is going to help us follow the classroom rules and act better in class. Do you want to know how the game works? There are four jars on my desk/front table. Each of these jars has different things written on the pieces of paper inside.
2. In this jar (hold up jar #1 labeled “Behaviors”) there are three class behaviors that we need to work on (off-task behavior, inappropriate vocalizations, and general non-compliance, and all behaviors). *Get students involved by having them demonstrate examples of inappropriate or disruptive behaviors look like for each target behavior.*
3. In this jar (hold up jar #2 labeled “Names”) there are pieces that have each of your names, “whole class”, and “wild-card”. When “whole class” is picked, I will be watching everyone’s behaviors, and when one person’s name is picked, I will only be looking at their behaviors. If the “wild-card” is picked, the whole class gets a free pass that day, but I know we won’t need it! It is important that everyone tries their hardest to behave, because you won’t know who I am watching!
4. In this jar (hold up jar #3 labeled “Goals”) there are pieces of paper that have the number of behaviors that will be allowed to happen before the class doesn’t earn the reward. If the behaviors that happen are equal to or less than the goal number, then the class will earn the reward. If the behaviors happen more than the goal number, then the class will not earn the reward and will have to do better tomorrow!
5. In the last jar (hold up jar #4 labeled “Rewards”) there are pieces of paper that have the rewards that everyone in the class said were ones they would want to earn (*Give examples of possibilities*). There are also a few pieces of paper that say “Mystery Motivator”. These Mystery Motivators are letters that build up to a bigger prize (*Give example of spelling out pizza to earn a pizza party*).
6. During (*insert instructional period*) class, we will play this game. While I am teaching, I will be watching everyone and marking on this paper (hold up recording form) if I see any of the behaviors we talked about. Our friend from SUNY Fredonia, Ms. Stephenson, will also be doing the same thing in the back of the room.
7. Does anyone have any questions about the game? (*Answer any questions*)
8. Draw slips from jar #1, jar #2, & jar #3; give to researcher. (*Do not tell students what was picked*).

9. Okay! Let's start class and begin the game! (*Remind students of rules halfway through*)
10. At the end of class, determine whether the reward was earned based off of the slips drawn from jars #1, #2, & #3. Announce whether the class met the criterion or not. If the reward was earned, allow one student to come pick from jar #4. If the reward was not earned, do not tell who prevented the reward from being received. Encourage the class to do better tomorrow. If a "wild-card" is the chosen slip, all students receive the reward regardless of whether the criterion was met or not.
11. If appropriate, administer reward immediately. If not, tell the students when they will be receiving the reward (during lunch, end of the day, etc.).

Day Two-Five (both phases):

1. Does everyone remember the "Chance Jars" game we played yesterday? (*Review the rules of the game for those who don't*). We are going to play that game again today!
2. Draw slips from jar #1, jar #2, & jar #3; give to researcher. (*Do not tell students what was picked*).
3. Okay! Let's start class and begin the game! (*Remind students of rules halfway through*)
4. At the end of class, determine whether the reward was earned based off of the slips drawn from jars #1, #2, & #3. Announce whether the class met the criterion or not. If the reward was earned, allow one student to come pick from jar #4. If the reward was not earned, do not tell who prevented the reward from being received. Encourage the class to do better tomorrow. If a "wild-card" is the chosen slip, all students receive the reward regardless of whether the criterion was met or not.
5. If appropriate, administer reward immediately. If not, tell the students when they will be receiving the reward (during lunch, end of the day, etc.).

Adapted from: McKissick, C., Hawkins, R., Lentz, F., Hailley, J., & McGuire, S. (2010). Randomizing multiple contingency components to decrease disruptive behaviors and increase student engagement in an urban second-grade classroom. *Psychology in the Schools, 47*(9), 944-959.

Appendix D

Consumer Satisfaction Survey

“Chance Jars” Game

Directions:

Please read each item aloud to your students and ask them to circle the number that best represents their feelings about that particular item. Emphasize the importance of completing the rating *individually* and *privately*.

1. How much did you enjoy the **“Chance Jars” game**?

1	2	3	4	5
Not at all		OK		Liked it a lot

2. How much did you like using **Jar #1 to determine the behavior goal** for each day?

1	2	3	4	5
Not at all		OK		Liked it a lot

3. How much did you like **using Jar #2 to figure out whose behavior** would be monitored each day?

1	2	3	4	5
Not at all		OK		Liked it a lot

4. How much did you like **using Jar #3 to figure out how many behaviors were allowed** happen to still earn the reward for that day?

1	2	3	4	5
Not at all		OK		Liked it a lot

5. How much did you like **using Jar #4 to find out what rewards the class earned** that day?

1	2	3	4	5
Not at all		OK		Liked it a lot

6. How much did you **enjoy the Mystery Motivator** reward?

1	2	3	4	5
Not at all		OK		Liked it a lot

7. How much did the “Chance Jars” game **help you follow** the classroom rules and act better in class?

1	2	3	4	5
Not at all		Some		A lot

8. Would you like to **use the “Chance Jars” game more** during the day?

1	2	3	4	5
Not at all		Maybe		Yes!

9. How **fair** was the “Chance Jars” game to everyone in the class?

1	2	3	4	5
Not fair at all		Somewhat fair		Very fair

10. How **important** is it to follow the rules of the classroom?

1	2	3	4	5
Not important at all		Somewhat important		Very important

Additional Comments/Suggestions: _____

Appendix E

Teacher Acceptability Survey

“Chance Jars” Game

Directions:

Please read each item and circle the number that best represents your feelings about the “Chance Jar” game. Please feel free to leave any additional comments or suggestions at the end of the survey form.

1. How **easy** was the “Chance Jars” game to implement and include into your routine?

1	2	3	4	5
Not easy at all		Somewhat easy		Very easy

2. How **well** did the “Chance Jars” game decrease your students’ disruptive behaviors?

1	2	3	4	5
Not well at all		Somewhat well		Very well

3. How **satisfied** with the outcomes of the “Chance Jars” game were you?

1	2	3	4	5
Not at all satisfied		Somewhat satisfied		Very satisfied

4. Overall, the “Chance Jars” game was **beneficial** for my students.

1	2	3	4	5
Not beneficial at all		Somewhat beneficial		Very beneficial

5. Do you think that the “Chance Jars” game is something that you will **continue to utilize**?

1	2	3	4	5
Not at all		Maybe		Definitely

6. How likely are you to recommend the “Chance Jars” game to a colleague?

1	2	3	4	5
Not likely at all		Somewhat likely		Very likely

Additional Comments/Suggestions: _____

Appendix F

Fidelity Checklist

“Chance Jars” Game

Researcher: _____

Date: _____

Location/Subject: _____

Teacher: _____

Time Session Started: _____

Time Session Ended: _____

Directions: Observe the teacher as s/he implements the intervention and use the scoring code below to note the presence and/or absence of each intervention component.

Scoring Code:

(+) Goal demonstrated

(-) Goal not demonstrated

(N/A) Not applicable

_____ 1. Classroom rules are posted and reviewed by the teacher.

_____ 2. Teacher has a checklist of student names and spaces to record checks for target behaviors.

_____ 3. Researcher has a checklist of student names and spaces to record checks for target behaviors.

_____ 4. Teacher uses script to review the game with the students.

_____ 5. Teacher announces possible rewards if students successfully meet the pre-established criteria.

_____ 6. Four labeled jars are visible in classroom; Jar #1 labeled “behaviors”, Jar #2 labeled “names”, Jar #3 labeled “rules number”, and Jar #4 labeled “rewards”.

_____ 7. At the beginning of the session, teacher selects a piece of paper from Jar #1 to identify target behavior; (“Off-task”, “Inappropriate Vocalization”, “Comply within 5-10 seconds”, or “All”).

_____ 8. Teacher then selects a slip of paper from Jar #2; (pieces of paper with the words “whole class”, “Wild-Card”, or a specific student printed on them).

_____ 9. Teacher provides a halfway check to entire class.

_____ 10. Teacher evaluates pupil performance on basis of first three jar selections with the researcher; if pupils meet pre-established criteria, then teacher congratulates students and randomly selects one pupil to pick a reinforcer from Jar #4.

_____ 11. If individual or group fails to reach criteria, then teacher announces that they did not meet the criteria and encourages the class to work hard the following day.

_____ 12. Teacher does not mention name of individuals when criteria is not reached.

_____ 13. Following session, investigator makes a smooth transition to the next instructional activity.

_____/13

(Record the number of behaviors observed plus the number of N/A)

_____ % **Procedural Fidelity**

(Number of steps present ÷ Number of steps present & absent × 100)

Anecdotal Notes/Comments: _____

Adapted from: Kestner, C. (2013). *The effects of three jars and Mystery Motivators on homework completion and accuracy in a 2nd grade classroom* (Master's thesis). Retrieved from: <http://hdl.handle.net/1951/63037>