AN EXAMINATION OF THE USE OF THE TOKEN ECONOMY IN
REDUCING BEHAVIORS IN AN ADOLESCENT WITH AUTISM
SPECTRUM DISORDER

A Thesis by

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The following faculty members have examined the final copy of this thesis for form and content, and recommends that it be accepted in partial fulfillment of the requirement for the degree of Master of Education with a major in Special Education.

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Linda M. Mitchell, Committee Chair

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Donna Sayman, Committee Member

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Julie Scherz, Committee Member

DEDICATION

I dedicate this research/study to the extraordinary children to whom I serve.

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I would like to thank my inspirational chair and committee members, Dr. Linda Mitchell, Dr. Donna Sayman, and Dr. Julie Scherz for their many years dedicated to teaching students at Wichita State University and for their support through my thesis writing and graduate school experience. I would also like to thank my family who provided me with words of encouragement and love.

ABSTRACT

The purpose of this study was to examine the efficacy of the token economy system in reducing physical aggression, property destruction, and disruptive talk in an adolescent diagnosed with autism spectrum disorder. The participant, age 15, met the enrollment criteria of a residential school designed to address the behavioral and academic needs of children with developmental disabilities. This study used quantitative, single subject treatment reversal design. The participant's behavior was observed and data was collected in Phase I, Baseline, "A" (one week), Phase II, Intervention, "B" (seven weeks), and Phase III, Return to Baseline, "A" (one week). In Phase I, Intervention, "A" the variability of the frequency of targeted behaviors included: physical aggression was 0 to 10, property destruction was 0 to 6, and disruptive talk was 0 to 7. In Phase II, Intervention, "B" the variability of the frequency of targeted behaviors included: physical aggression was 0 to 8, property destruction was 0 to 5, and disruptive talk was 0 to 40. In Phase III, Return to Baseline, "A," the variability of the frequency of targeted behaviors included: physical aggression was 0 to 9, property destruction was 0 to 2, and disruptive talk was 0 to 15. Interpretation of the results indicated instability in the variability of the frequency of all targeted behaviors, as the token economy did not serve as an effective method in modifying the behavior of the participant.

Keywords: Physical aggression, property destruction, disruptive talk, token economy system, and autism spectrum disorder.

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CHAPTER 1

STATEMENT OF THE PROBLEM

In the United States, special education services were not mandated in public education

settings until 1975. Under the Education of all Handicapped Act (EHA, 1975), all public schools

were required to provide educational services to children with special needs. Congress had

reauthorized and amended the special education law over the past years, with the most recent

reauthorization in 2004 with the passage of the Individuals with Disabilities Education

Improvement Act (IDEIA). IDEIA stated that children must be provided with a free and

appropriate education in the least restrictive environment (LRE). One of the continued mandates

of IDEIA is to meet annually to develop an individualized education plans (IEP) for each

qualified student to support learning, to outline the student's educational needs, goals, and

objectives, and to specify the amount of service time, transition plan, and behavior plan the

student would receive. No Child Left behind (NCLB) was passed in 2001 and required schools

to be accountable for every student's academic performance in the public school. Therefore,

students with disabilities are required to take state assessments, ensuring that schools are being

held accountable for their learning as well as that of peers who do not have disabilities. To meet

NCLB's goals, all students were to reach 100% proficiency in reading and math by 2012 (United

States Department of Education, 2010).

These national laws for special education outline what teachers must do in order to ensure

that all children succeed in educational settings. Included in their roles and responsibilities is

that teachers in today's classrooms are charged with using research/evidence-based strategies

(EBT) to increase student learning. Therefore, teachers must investigate

instructional/intervention methods to determine which are effective for student learning.

Sometimes this means providing and investigating if a different method of instruction/intervention works. Teachers might find that delivering effective instruction using research/EBT to increase student learning is challenging when students demonstrate difficult behaviors. Therefore, teachers must also use effective behavior management strategies to address and reduce difficult behaviors in order to be better able to provide effective functional and academic instruction

One of the most powerful EBT procedures to improve classroom behaviors is a token economy system (Klimas & McLaughlin, 2007). Standard approaches, such as classroom rules and reprimands, are sufficient to support the behavior of some students but might not be effective in controlling the behavior of others. Uncontrolled problem behaviors can interfere with otherwise effective instruction (Petscher & Baily, 2006). In order to understand EBT procedures of the token economy system, it is important to understand the terms associated with it.

Definitions

Token Economy. A token economy is a program in which individuals earn tokens (e.g. poker chips, stickers) for exhibiting acceptable behaviors (e.g. compliance), and can exchange these tokens for rewards (e.g. preferred activity) (Filcheck & McNeil, 2004).

Physical Aggression. Physical aggression is defined as the kicking, hitting, hair pulling, stabbing others with objects, punching, biting, or any other behavior that could cause injury to another person (Miller, 2010).

Property Destruction. Property destruction is defined as the throwing and breaking of objects, shoving furniture, kicking the walls, swiping task, and any other behavior that could damage property (Miller, 2010).

Disruptive talk. Disruptive talk is defined as screaming, yelling, swearing, name-calling, whining and/or crying, and making verbal threats toward or about others (Miller, 2010).

Purpose

The purpose of this study was to examine the efficacy of a token economy in reducing physical aggression, property destruction, and disruptive talk in an adolescent diagnosed with autism spectrum disorder. The single participant in this study attended a residential school to address his behavioral and academic needs. Prior to placement in the residential school, the participant received academic instruction and behavioral supports in a public education setting in a regular education classroom, and temporarily received homebound instruction until a more suitable placement was determined. During teacher instruction, the student often engaged in the following challenging behaviors: Hair pulling, biting, stabbing, kicking, punching, making verbal threats towards peers and staff, yelling, swearing, throwing and breaking objects, and engaging in self-injurious behaviors (e.g. banging head on desk or wall). Due to these challenging behaviors not being adequately managed in that educational setting, the child was placed in a residential school setting that provided an environment where the behaviors could be addressed. The challenging behaviors that were addressed in this study included: physical aggression, property destruction, and disruptive talk. Chapter 2 provides a literature review of previous research/EBT that existed in regards to the token economy system as it related to the problem and purpose of this study.

CHAPTER 2

LITERATURE REVIEW

Teachers might find that delivering effective instruction using research/EBT to increase student learning to be exigent as students demonstrate challenging behaviors in an academic setting. Therefore, teachers must continue to research methods to address challenging behaviors exhibited by students in order to increase the delivery of effective instruction in academic and other areas. The purpose for conducting this literature review was to determine what research/EBT exists already regarding the token economy. The literature review is divided into three sections that include the following: Historic to Modern Token Economy, Token Economy, and Instructional Strategies and Resources for Educators. Chapter 2 is concluded with a brief discussion on the existing research/EBT regarding the token economy system and its implications that led to the research question of this study.

Historic to Modern Token Economy

The token reinforcement system has been reviewed and analyzed by various researchers in relation to general principals of behavior. Hackenburg (2009) cited research literature that described when the token economy first appeared in human history and how the system is utilized today. The token system first appeared in human history in the transition from nomadic hunter-gather societies to agricultural societies, and expanded from simple barter economies to more complex economies (Hackenburg, 2009). Its current use provides the basic economic framework for all monetary transactions involving some form of token reinforcement (Hackenburg, 2009).

In addition, the token economy has been employed as a behavior-management and a motivational tool in education and rehabilitation settings. Stilitz (2009) described the schooling methods used by Joseph Lancaster (1778-1838), in which Lancaster utilized a system of hierarchy to teach young children. The eldest and most competent teachers would teach an average of ten children each. Lancaster imposed a reinforcement method to be used by the teachers, such as token economy, for the purpose of encouragement. Using this method, school children would earn tokens and exchange them for prizes. This method was significantly practiced throughout the world in the 19th century, and has since been manipulated and modified over the years and practiced in a variety of disciplines. Token reinforcement systems played an important role in the emergence of applied behavior analysis as it currently stands as one of the most successful behaviorally based applications in the history of psychology (Hackenburg, 2009).

Token Economy System

Researchers examined the efficacy of the token economy as it correlated with effective academic instruction in educational settings. Nelson (2010) examined classroom participation in the presence of a token economy and revealed that of the 318 participants selected for the study, 251 participants demonstrated classroom participation defined by asking questions in class when the token economy was facilitated. In addition, 138 students reported that although participation was important, they had relatively low levels of participation in other courses whereas the token economy system was not facilitated.

In a related study, which utilized the token economy as one of the methods to increase effective instruction, a study was completed by Self-Brown and Mathews II (2003). Self-Brown

and Matthew II (2003) examined the effects of classroom structure on student achievement goal orientation for mathematics. The participants were from three elementary classrooms, and were assigned randomly to the token economy, contingency contract, or control condition. The researchers determined the effects of classroom evaluation structure on students' achievement goals. The results of this study, as indicated by the researcher, demonstrated significant differences within and across classroom structure conditions. The results provided by the researcher also concluded that the participants who received the contingency contract within the classroom structure set more learning goals than other students in other classroom structure conditions. There were no significant differences in performance goals of participants in control condition structure. Students in the token economy classroom structure were rewarded for meeting normative standards and tended to adopt a performance-goal orientation. In conclusion, there was strong evidence that supported that classroom evaluation structure can influence student's learning strategies, self-conceptions of ability and competence, and task motivation.

Research that indicated the efficacy of the token economy system improved academic instruction also encompassed how the token economy can be of influence on behavioral response in academic settings. Filcheck and McNeil (2004) affirmed that the token economy was a promising intervention that may be utilized to assist teachers in managing the increased levels of disruptive behavior demonstrated by children in preschool classrooms. Tiano, Fortson, McNeil, and Humphrey (2005), also declared that research supported the effectiveness of the token economy in decreasing disruptive behavior in academic settings. In support of the authors conclusive findings, a study by Klimas and McLaughlin (2007) examined the effects of an individual token economy with a 6-year-old diagnosed with severe behavior disorder enrolled in a kindergarten-third grade classroom that served children with special needs. The token

economy system was used to address the following behaviors: time to completion, the number of assignments completed, and the frequency of inappropriate behavior. The results of this study indicated that the average time to complete an assignment decreased while the token economy was in place. In addition, the researcher of the study suggested that the token economy served as an effective intervention/method to decrease the frequency of inappropriate behavior and increase desirable behavior.

With indication that the token economy served as an effective intervention/method to decrease the frequency of inappropriate behavior, a study by Tiano, Fortson, McNeil, and Humphreys (2005) also had a comparable outcome. They examined the efficacy of three techniques used in a Head Start classroom, which included: techniques used by the teacher currently "A", response cost "B", and the token economy "C". The authors determined if less inappropriate behaviors are exhibited when the response cost "B" and token economy "C" were implemented, than when the teacher utilized the method "A" in the baseline. The results of this study indicated that a decrease in inappropriate behavior occurred throughout the study for each child, and it did not return to baseline levels during the withdrawal conditions. In addition to this study, Koegel, Koegel, and Dunlap (1996) also determined that utilizing strategies/methods that included the token economy decreased participants' disruptive behaviors (e.g., aggression, self-stimulation, and self-injurious behavior) occurred as a result of the method.

In a related study focusing on differential reinforcement procedures to increase compliance in children, Wilder, Harris, Reagan, and Rasey (2007) examined functional analysis and treatment of noncompliance by preschool children. The authors determined the function of noncompliance in two participant preschool children, 3 years of age, during situations in which their caregivers experienced this behavior, and sought to develop a function-based intervention

to increase compliance. The setting of the study was a small tutoring room at the school; and two to six sessions were conducted daily for 2 to 3 days per week. Data was collected using paper and pencil to determine the percentage of trials with compliance or noncompliance. Data on the independent variable were collected by recording whether or not the therapist delivered the coupon earned which was contingent on the participant's compliance during the treatment session. A paired-stimulus preference assessment was conducted in order to determine each participant's preferred activity. A functional analysis was used to evaluate noncompliance in three 2-minute trials during the control. A treatment evaluation was conducted post-functional analysis of each participant using differential reinforcement or non-preferred activities for alternative behavior evaluated in reversal designs. Coupons were earned for compliance with instruction and each coupon earned the participant 1-minute of uninterrupted access to a preferred activity. The participant's compliance increased to 100% immediately after the introduction of the intervention, coupons and video, and their behavior was controlled by the contingencies. Results of the study indicated that noncompliance was evoked by the instruction to terminate a preferred activity and was maintained by continued access to that activity.

Instructional Strategies and Resources for Educators

In order to have reliable and valid research on the efficacy of the token economy as it related to this study, it was important to examine methods of ensuring reliability and validity of procedural methods and data collection in the event that the researcher was absent at any time throughout the study. For this purpose, the researcher of this study reviewed the research of Petscher and Bailey (2006). Petscher and Bailey (2006) examined the effects of a treatment package on implementation of a token economy by instructional assistants in a classroom for

student with disabilities. This study focused on the accuracy of three teacher assistants in implementing a classroom token economy as a result of the routine training received through the school system. Data was collected pre-and post-implementation of the treatment package using paper data sheets and/or a laptop computer during 10 minute sessions per participant three times daily totaling 49 sessions observed by the researcher per participant. The researchers recorded every opportunity for the participant to respond to the children as well as whether the response was correct or incorrect on the data collection form. A treatment introducing prompting and self-monitoring with accurate feedback was provided to the assistants, which was faded into self-monitoring interventions. Data collected pre-and post-implementation of the treatment package indicate that there was a significant improvement of the teacher assistants' ability to accurately implement the classrooms token economy as a result of the treatment package. Participant one went from zero correct responses during the baseline to an increase of roughly 50% accuracy of correct responses after receiving the treatment package. Participant two went from zero correct responses during the baseline to an average of 10% correct responses after receiving the treatment package. Participant three went from zero correct responses during the baseline to roughly 90% correct responses after receiving the treatment package. This study suggested that if a treatment package including prompting and self-monitoring with accurate feedback is provided to assistants, it could improve the accuracy of implementation of the token economy.

With the understanding of how a researcher could ensure reliable and valid research methods and results, it was important to explore other instructional strategies and resources for educators as it related to this study. Hackenberg (2009) examined token reinforcement procedures and concepts in relation to general principals of behavior. The study was four fold in that the research reviewed/discussed previous research on token economies in relation to

common behavioral functions, described the role of token procedures in the symmetrical law of effect, considered the utility of token reinforcement used to bridge the methodological gulf separating research with humans from that with other animals, and discussed the relevance of a token economy to the field of behavioral economics. The results of the study indicated that a token economy has the potential to significantly advance research and theory in behavioral economies.

Lasserre, Lerman, Call, Addison, and Kodak (2008) examined the relations among reinforcement magnitude, preference, and efficacy by drawing on the procedures and results of an experiment in this discipline. Three participants ranging in age from 5 to 11 years, referred for the functional analysis and treatment of problematic behavior, were selected for this study. All of the participants in the study had a diagnosis of autism spectrum disorder and demonstrated problem behavior, such as aggression and disruption. The researcher used a functional analysis procedure to determine the reinforcements and preferences that maintained each participant's problem behavior, and as a result determined that each participant had multiple social rein forcers. Data collected from the functional analysis procedure determined the targeted responses for each participant in order to reduce the problem behaviors. The study concluded after 22 trials that were 60 minutes in length per trial from baseline to final assessment. Results indicated that the partiality for different degrees of social reinforcement can predict reinforcement efficacy and degree to the effects may be intervened by the schedule requirement.

Cautilli and Dziewolska (2004) examined the effects of stimulus control intervention for sleep on escape behavior and token performance of a 9-year-old child with oppositional defiant disorder. The length of the study was 23 school days, in which the researchers determined the number of hours of sleep per night in comparison to the average points earned out of possible

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points per day that the child could earn on the token system. The results of the study indicated

that poor sleep patterns contributed to poor performance on the token system the following

morning. Thus, the study demonstrated a functional relationship between neutralizing sleep

difficulty with the increase of points earned on the token economy, and the decreasing of

episodes of response cost.

Buron and Curtis (2003) developed the strategy of the 5-Point Scale, which help

professionals and parents understand and manage the behavior issues of their child/student with a

diagnosis of Autism Spectrum Disorder. The 5-Point Scale taught students to manage behaviors

and helped instructors manage behaviors. The scale required the student to rate their anger

and/or voice level on a scale from one to five, five being the most intense/severe. The ability for

students to be able to effectively communicate with a professional how they felt on the scale

helped the professional in determining what intervention needs to take place at that moment to

manage the behavior. It also calmed the student because it served as a voice for the student, in

that he/she appropriately communicated his/her feelings and thoughts to another person. It

served as an effective tool for the student as it becomes a way for the student to self-monitor

his/her own behavior.

Summary

The importance of investigating past research is to examine what is effective per

research/EBT regarding the token economy system. Through the review of research/EBT, it

established the foundation for this study on the efficacy of the token economy in reducing

disruptive behavior in an adolescent. The review of the research/EBT revealed how the token

economy system can serve as an effective behavior management strategy/method to decrease of

the frequency of disruptive behavior and its implications on delivering effective instruction. In addition, it provided useful information on other methods/strategies that related to this study. The review of the research/EBT provided valuable information for educators and future researchers whom share the overall goal of delivering effective instruction by utilizing research/EBT on management of student behavior.

Based on the purpose of the current study pared with past token economy research, the research question used to guide this study was: Will implementation of the token economy reduce physical aggression, property destruction, and disruptive talk in an adolescent diagnosed with autism spectrum disorder?

CHAPTER 3

METHODOLOGY

This quantitative research/study used a single-subject research design method to gather, analyze and report results of the data. "Single-subject research is a rigorous, scientific methodology used to define basic principles of behavior and establish evidence-based practices. A long and productive history exists in which single-subject research has provided useful information for the field of special education" (Horner, Carr, Halle, Mcgee, Odom, Wolery, 2005, p. 165). An A-B-A design was implemented and data was collected using a behavioral data form in Phase I, Baseline, A (1 week), Phase II, Intervention, B (7 weeks), and in Phase III, Return to Baseline, A (1 week). Data was gathered in the spring 2011 academic school year for the purpose of examining the efficacy of the token economy in reducing physical aggression, property destruction, and disruptive talk of an adolescent diagnosed with autism spectrum disorder.

Participant

A 15-year-old Caucasian adolescent male diagnosed with autism spectrum disorder who attended a residential school located in an urban city in a Midwest state was the focus of this study. Prior to residential placement, he was raised in a dual income home with no siblings. The participant was adopted by his parents at the age of 11 days. He was diagnosed with autism spectrum disorder at the age of 5 years 4 months, and his biological family's medical history is unknown. The participant began speaking at the age of 8 months and began walking at the age of 14 months. He had no health abnormalities and demonstrated fine and gross motor and cognitive abilities similar to that of typically developing peers. The participant attended

preschool at age 4 in a regular education classroom, and continued schooling in a regular education classroom until the frequency of behavioral problems and physical aggression became unmanageable. Unsuccessful intervention methods the school used in attempt to improve behavior included: providing a 'stern' request, commands, and reprimands; ignoring the behavior; provide independent time when upset in a quiet location of the building; present an un-preferred task; and going hands on immediately when the student engaged in incidents of physical aggression. Intervention methods that the school used which slightly improved behavior included: reduction to the amount of work requested for the participant to complete; reduced length of time on task; provide immediate praise or reinforcement for task completion; and provide one to one attention. Although these intervention methods minimally improved the participant's behavior, the frequency of the participant's behavior and physical aggression became unmanageable for school staff. An attempt by the school had also been made to have him in a one-to-one classroom with an aide, and this also failed due to incidents of physical aggression on staff. The participant was then temporarily in homebound schooling due to these challenging behaviors not being adequately managed in the educational setting, and the participant's parents and school district then requested enrollment for the participant at a day only or residential school.

When the participant entered the residential school, the setting of this study, he immediately demonstrated difficulty with regulating his emotions and was non-compliant to adult requests (the term oppositional has been used to describe his behavior, also). He also demonstrated behavior which included the following: dropping, physical aggression towards peers and staff, property destruction, tantrum, interfering with others, self-injurious behavior, eloping out of a classroom or school building, and engaging in disruptive talk. The residential

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team developed a behavior plan upon his acceptance into the residential school for the purpose of addressing his behavioral needs. Strategies and methods that were implemented after enrollment and deemed unsuccessful with this participant included: power cards and social stories that entailed a brief description of what the participant was to do when upset. Strategies and methods of addressing his behavioral needs which improved behavior of the participant included: rolling a numbered cubed to determine a consequence which corresponded to the number rolled as a result of demonstrating inappropriate behavior, and appropriate medication with psychological and medical consult. His behavior plan, however, did not entail a token economy and from the researcher's knowledge, the participant never had past experience with implementation of the token economy to address his behavioral needs. The participant, although demonstrated an improvement in behavior with support of a behavior plan and highly structured environment, still demonstrated a high frequency of physical aggression, property destruction, and disruptive talk. In addition to addressing his behavioral needs at the residential school, he was able to receive academic instruction. Within the timeframe of this study, he was receiving academic instruction in reading, science, math, and social studies at the 9th grade level.

With the desire to implement a token economy to address the participant's behavioral needs at the time of this study, the researcher determined that it was necessary to explore what he preferred as leisure choices in order to provide them as reinforcements or rewards within the token economy used for him. The participant expressed to the researcher of this study during the development of the Token Procedural Document (Appendix B) that he preferred the following leisure choices: playing computer games, Lego, going out to eat, playing with animals, reading books, collecting stamps and coins, throwing rocks in the pond, watching movies, riding bikes, writing and drawing cartoons, and spending time with his family. It was determined by the

researcher and participant that some of these leisure options, in addition to other options, would be motivating for him when earning reinforcements during the intervention of this study.

Classroom Demographics

The setting for this study was the investigators classroom at a residential school. The classroom had eight male students aged 12 to 16 years. The classroom had six para-educators and one teacher, all whom had worked with each child in the classroom for a period of one or more years.

Setting

The setting was a self-contained classroom that was based on individualized programs. The learning environment was structured in order to facilitate the development of independence and to provide the students with the academic foundation necessary for them to reach their true potential. The foundation for the learning environment entailed the adoption of curriculum referred to as *structured teaching strategies* (University of North Carolina School of Medicine, 2010). The goal of the use of *structured teaching strategies* utilized in the learning environment was to assist students in the understanding and meaning of activities, engage the unique learning style of the students with disabilities, decrease anxiety, increase the ability to learn, promote independent functioning, management of behavior, and help make sense of the environment. Tools utilized within this structure included: daily schedules, work systems, and visual organization that aided students in learning how to transition successfully, build independence, organize time and space, teach flexibility, and vocational skills.

Instruments

   Behavioral Data Sheets. Behavioral data sheets (see Appendix A) were used to record the frequency of property destruction, physical aggression, and disruptive talk displayed by the participant across all phases of the study. Staff employed at the residential school that worked directly with the participant had received initial training by the schools psychology team on methods of collecting reliable and valid data, and had since practiced these methods through collection of behavior data for both the participant of this study and other individual students throughout the building. Staff that worked directly with the participant at the time and setting of this study was instructed by the researcher of this study as to what and how behaviors were to be monitored and recorded on the behavioral data sheets in the event that the researcher was absent at any point throughout the study.

   Token Economy Procedural Document. The token economy procedural document, developed by the participant of this study with support of the researcher (see Appendix B), specifically outlined for staff members and the participant the procedural operation. These procedures and reinforcements in this document were provided and described by the researcher to staff members whom worked directly with the participant and the participant, prior to implementation of the intervention method.

   Token Card. The Token Card (see Appendix C) was used to record in numerals the number of tokens earned, tokens spent, and the tokens that were available for the participant to spend in Phase II Intervention B (7 weeks).

Procedure

Letters of consent were sent out to the parent and provided to the participant of this study (see Appendix D and E). The consent letters had been signed by the parent and participant of the study and returned to the researcher through fax and in person. After gaining consent from both the parent and the participant, the researcher provided and described to the staff members who directly worked with the participant the Token Economy Procedural Document (Appendix B). In addition, given that staff had prior training by the schools psychology team on methods of collecting reliable and valid data, the researcher reviewed the behavioral data sheets with the staff working directly with the participant describing specifically what behaviors and definitions of the behaviors that were to be monitored and recorded on the Behavioral Data Sheets (Appendix A) in the event that the researcher was absent at any point throughout the study. Prior to any staff taking research data for the study, the researcher observed them to ensure they were consistently and reliably recording behavioral data as trained. Upon completion of gaining letters of consent and training provided by the researcher of this study with staff members working directly with the participant the research study began.

The research study began, Phase I, Baseline, A (1 week), by observation of the participant's behavior from 8:00 a.m. to 3:30 p.m. Data was collected by the researcher and direct staff members on the behavioral data sheets as to the frequency of physical aggression, property destruction, and disruptive talk by the participant and marked as tallies.

Implementation of token economy began with a description of the Token Economy Procedural Document (Appendix B) by the researcher to the participant on the first day of Phase II, Intervention, B (7 weeks). The participant had a timer running consecutively for 30-minute intervals from 8:00 a.m. to 3:30 p.m. The participant was instructed that for every 30-minute interval, he was to complete scheduled activities without an incident of physical aggression,

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property destruction, and/or disruptive talk. If successful, the participant received verbal praise and was given one token documented in numerals on the daily Token Card by the researcher or direct staff members. The timer did not start or stop at any time, even if he had an incident of physical aggression, property destruction, and/or disruptive talk. If an incident of behavior did occur in a 30-minute interval, he did not earn a token. The participant could earn another token during the next consecutive 30-minute interval. Once he earned a minimum of 4 tokens, he had the option to spend the tokens for a break of choice under the 4 token lists. If the participant opted to save the tokens earned, he could select to utilize the tokens to purchase breaks that were of greater value to the participant at any time desired by him. If the participant chose to spend tokens, he continued earning tokens even if it was during a break time as long as he was without an incident of physical aggression, property destruction, and/or disruptive talk. The participant's tokens did transfer from one day to the next. For example, if he had 4 tokens left over on Monday, he could use those 4 tokens on Tuesday morning if the desired by the participant. All tokens earned, spent, and tokens available for him to spend were documented on the daily Token Card by the researcher or direct staff members during Phase II, Intervention B (7weeks).

Implementation of the intervention began immediately after the explanation of the procedure was described to the participant. The researcher and/or direct staff members then monitored him, Phase II, Intervention B, over a 7-week period to determine the efficacy of the token economy on reducing physical aggression, property destruction, and disruptive talk. Data was recorded by the researcher and/or direct staff members on the behavior data sheet as to the frequency counts of physical aggressions, property destruction, and/or disruptive talk observed. Data was also recorded on the Token Card in numerals per the number of tokens earned, spent, and tokens available for the participant to spend by the researcher and/or direct staff members.

After the 7 weeks of Phase II, Intervention B, Phase III, Return to Baseline, A (1 week) began. On the first day of the 9th week, the participant and direct staff members were instructed by the researcher that the he would no longer be given tokens to earn breaks. Rather, him earning breaks as they naturally occurred throughout the school day, which was the same procedure he followed in Phase I, Baseline A of this study. Data was recorded by the researcher and/or direct staff members from 8:00 a.m. to 3:30 p.m., utilizing the behavioral data sheet, and marked as tallies per the frequency counts of physical aggression, property destruction, and/or disruptive talk immediately after the student was informed of the break procedure.

Data Analysis

The researcher collected and analyzed the data by graphing the frequency of physical aggression, property destruction, and disruptive talk across conditions using single subject research. Dependent (measurement of frequency of the identified challenging behaviors) and independent variables (the intervention) was defined for the final results section following completion of the analysis of all data. The researcher determined the results of the study by reviewing and comparing all of the behavioral data collection sheets with the graphs that depict the results of the study. Internal validity was identified by the researcher with use of data collected by both the researcher and direct staff members at different points in time with the single participant of the study. Data analysis and results were confirmed by the researcher's Chair of the Thesis committee, who supported and guided this study. The experimental effect was determined when predicted change in the dependent variable showed covariance with the manipulation of the independent variable. In addition to the graph, the interpretation of the data

was presented in a narrative format that concluded the study. Results of this study determined if the token economy effectively modified the participant's behavior.

CHAPTER 4

RESULTS

The results addressed data analyses for the examination into the efficacy of the token economy in reducing physical aggression, property destruction, and disruptive talk in a single participant. The quantitative study used single subject treatment reversal design to determine whether implementation of the token economy reduced physical aggression, property destruction, and disruptive talk of the participant. *Figure 1* displays the results of the study which reflect observation and data collection from Phase I Intervention A (1 week), Phase II Intervention, "B" (7 weeks), and Phase III, Return to Baseline, "A" (1 week).
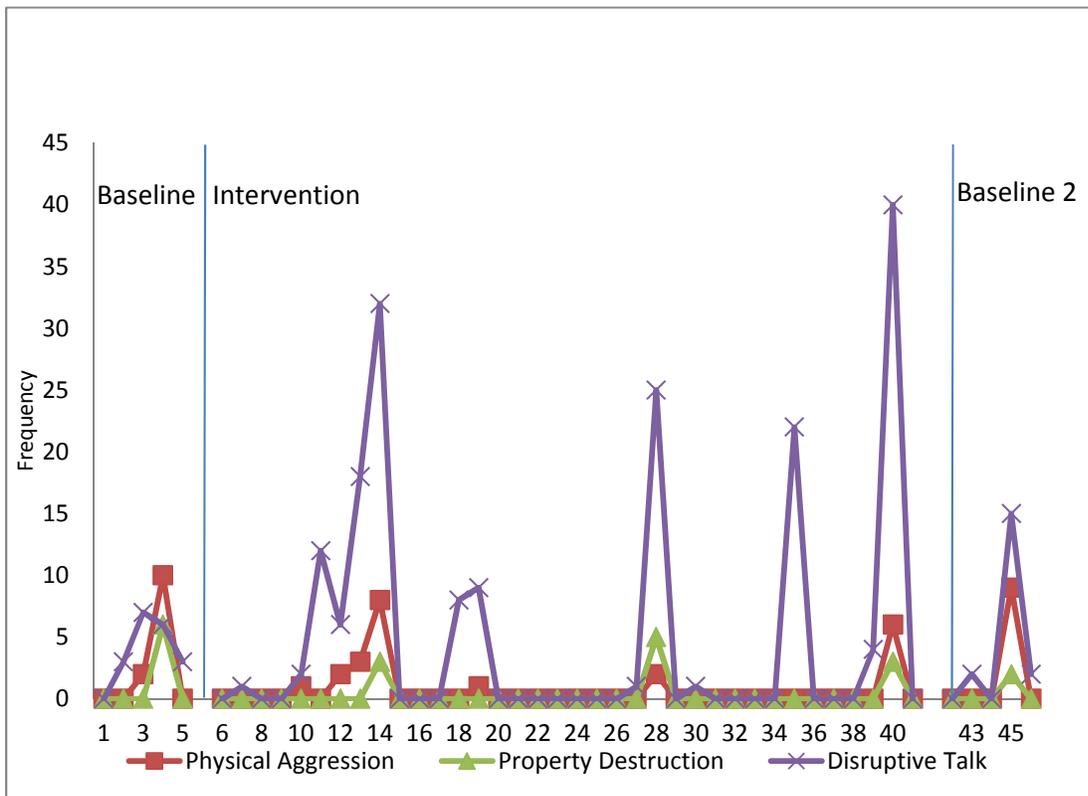

Figure 1. Daily Frequency of Physical Aggression, Property Destruction, and Disruptive Talk In Phase I, Intervention "A," Phase II, Intervention, "B," and Phase III, Return to Baseline, "A."

As seen in *Figure 1*, Phase I, Intervention, "A," lasted a total of five days. The variability of the frequency of physical aggression was zero to ten. The peak frequency of physical aggression during the initial phase occurred on the fourth day during classroom instruction, and the lowest frequency occurred on the first, second, and fifth day. The variability of frequency of property destruction was zero to six. The peak frequency of property destruction during the initial phase occurred on the fourth day during classroom instruction, and the lowest frequency occurred on the first, second, third, and fifth day. The variability of the frequency of disruptive talk was zero to seven. The peak frequency of disruptive talk occurred on the third day during classroom instruction, and the lowest frequency occurred on the first day. The variability of behaviors depicted in *Figure 1* during Phase I, Baseline, A, helped the researcher determine that the participant of this study may benefit from the implementation of the token economy. The token economy was implemented during Phase II, Intervention "B" with aspirations that the token economy would effectively modify the behaviors demonstrated by the participant.

Phase II, Intervention, "B," lasted a total of 35 days as indicated by the break in days in *Figure 1*. The phase began on the sixth day of the study and ended on day 41. The variability of physical aggression during Phase II was zero to eight, which indicated a decrease in variability from the initial Phase I of zero to ten. The peak frequency of physical aggression occurred on the 14th day of the study during classroom instruction. The lowest frequency of physical aggression, which was zero, occurred on the sixth through the 9th, 11th, 15th through 18th, 20th through 27th, and 29th through 39th and 41st days. The variability of property destruction during Phase II was zero to five, which indicated a decrease in variability from the initial Phase I of zero to six. The peak frequency of property destruction occurred on the 28th day of the study during classroom instruction. The lowest frequency of property destruction occurred on the 6th

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through 13th, 15th through 27th, 29th through the 39th and the 41st days. The variability of

disruptive talk during Phase II was 0 to 40, which indicated an increase in variability from the

initial Phase I of 0 to 7. The peak frequency of disruptive talk occurred on the 4th day of the

study during classroom instruction. The lowest frequency of disruptive talk occurred on the 8th,

10th, 11th, 15th through 17th, 20th through 26th, 29th, 31st through 34th, 36th through 38th, and

on the 41st days. The peak and lowest frequency of physical aggression, property destruction,

and disruptive talk displayed in *Figure 1,* helped to provide a description of the slopes of the

graph.

Phase III, Return to Baseline, "A," began on the 42nd day of the study and lasted a total

of 5 days as indicated by the break in days in *Figure 1* between day 41 in Phase II to day 42 of

Phase III. The variability of physical aggression during Phase III was 0 to 9. This indicated a

decrease in variability of physical aggression from the initial Phase I of 0 to 10 to Phase III of 0

to 9. The peak frequency of physical aggression in this phase occurred on the 49th day of the

study during classroom instruction and lunch. The lowest frequency of physical aggression in

this phase occurred on the 42nd through 44th and the last day of the study, day 45. The

variability of property destruction during Phase III was 0 to 2. The variability in this phase

indicated a decrease in variability of property destruction from the initial Phase I of 0 to 6 to

Phase III of 0 to 2. The peak frequency of property destruction in this phase occurred on the

45th day of the study during lunch. The lowest frequency of property destruction in this phase

occurred on the 42nd through 44th, and the 45th day of the study. The variability of disruptive

talk during Phase III was 0 to 15. This indicated an increase in variability of disruptive talk from

the initial Phase I of 0 to 7 to Phase III of 0 to 15.

The variability of property destruction and physical aggression decreased from Phase I to Phase III, however, the intervention did not stabilize the behaviors during Phase II as indicated by the slopes in *Figure 1*. In addition, the variability of disruptive talk from the initial Phase I to Phase III indicated an increase; however, the peak variability of disruptive talk occurred during Phase II. Therefore, the token economy, as used within this study, did not serve as an effective method in modifying the behavior of the participant of this study. Results, as depicted in *Figure 1* represented instability of the frequency of all behaviors, particularly during the intervention in Phase II of the study.

Reliability of Measurement and Fidelity of Treatment

The reliability of measurement was established by involvement of many observations over time of the target behaviors. The observation conditions (e.g., time of day and location) were all consistently applied. In order to ensure that both direct staff members and the researcher were recording reliable data, the researcher developed and shared with the direct staff members the definition of what behaviors which constituted as physical aggression, property destruction and disruptive talk. The following is the definition of each behavior which guided staff and the researcher in recording accurate data: Physical aggression is defined as the kicking, hitting, hair pulling, stabbing others with objects, punching, biting, or any other behavior that could cause injury to another person (Miller, 2010). Property destruction is defined as the throwing and breaking of objects, shoving furniture, kicking the walls, swiping task, and any other behavior that could damage property (Miller, 2010). Disruptive talk is defined as screaming, yelling, swearing, name-calling, whining and/or crying, and making verbal threats toward or about others (Miller, 2010). In addition to providing the definitions of each targeted

behavior, internal validity was identified by the researcher with use of data collected by both the researcher and direct staff members at different points in time with the single participant of the study. The researcher and the chair committee member also confirmed the results of the study by reviewing and comparing all of the behavioral data collection sheets with the graphs that depict the results of the study.

The fidelity of treatment (intervention as the independent variable) was assured by following the strict protocol of making sure the participant understood the token economy system that was implemented, the purpose of its use, inclusion of the participant in establishing that the tokens/rewards were desirable, and that the intervention was implemented as stated consistently by the researcher and trained staff members during the study.

CHAPTER 5

DISCUSSION

The purpose of this study was to determine whether implementation of the token economy reduced physical aggression, property destruction, and disruptive talk in an adolescent diagnosed with autism spectrum disorder. The reviewed literature indicated that the token economy could serve as an effective behavior management strategy/method to decrease the frequency of disruptive behavior and its implications on delivering effective instruction. In addition, one of the most powerful EBT procedures to improve classroom behaviors was a token economy system (Klimas and McLaughlin, 2007).

Through this current research/study, it indicated that intervention did not stabilize or reduce the targeted behaviors demonstrated by the participant. The peak of frequency of behaviors occurred during Phase II and Phase III. The participant's response during the implementation of the strategy varied from day to day depending on the participant's willingness to follow his schedule and complete the scheduled activities. During the study, antecedent data as to the location of the targeted challenging behaviors was recorded each day. The trend of location where incidents of behaviors occurred was reviewed by the researcher and noted that it occurred more often while in the classroom setting and the school cafeteria during the lunch hour. This information could support explanations as to why escalations of behaviors occurred during certain times within the day. Additionally, the participant had expressed during Phase II and Phase III of the study that he did not want to earn tokens when demonstrating targeted behaviors. As a result, the slopes in *Figure 1* indicated that the intervention was not a deterrent for the participant's behavior even though the participant did earn reinforcements throughout the study.

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The results of this research in comparison to the results of past research on the effectiveness of the token economy may have differed due to the following factors: Number of participants selected for the study, setting in which the study was conducted, environmental factors, and the participant's cognition. In addition, the possibilities for the peaks of frequency of behavior may have resulted from the participant's family visit, classroom visitors, illness, lack of sleep, and other student behaviors which occurred in the same setting as the participant, and/or defiance. It would be difficult in this study to determine if these variables would have changed the results of this study.

Limitations

Limitations of the study should be a factor when interpreting the results of this study. Limitations of this study included: single subject participant so that generalization to other students should not be considered from results of only this study, timeframe in which the study was conducted in, motivational level of the participant, other behaviors present that were not indicated as targeted behaviors for the participant in this study. In addition, the study did not address antecedent behaviors that may have affected whether the participant demonstrated the targeted behavior.

Future Research

Future research may focus on the antecedent behavior in conjunction with the implementation of the token economy system to reduce physical aggression, property destruction, and disruptive talk in adolescents with autism spectrum disorder. Future research may then indicate reasons as to why a participant demonstrates particular behaviors. It is also

suggested that future research increase its sample size to determine the efficacy of the token economy system. In addition, future research may place focus on the time of day and/or activity the participant is engaging in when demonstrating particular behaviors.

Conclusion

In conclusion, the current study found that the token economy did not serve as an effective intervention method/strategy in reducing physical aggression, property destruction, and disruptive talk in the participant of the study. However, these results indicate that it is necessary to continue to explore ways in which we can effectively manage disruptive behavior in order to increase the delivery of effective instruction in academic and other areas.

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APPENDICES

BEHAVIORAL DATA SHEET

Date:					
Staff Initials	Time	Physical Aggression	Property Destruction	Disruptive Talk	Location
	8:00-8:30 a.m.				
	8:30-9:00 a.m.				
	9:00-9:30 a.m.				
	9:30-10:00 a.m.				
	10:00-10:30 a.m.				
	10:30-11:00 a.m.				
	11:00-11:30 a.m.				
	11:30-12:00 p.m.				
	12:00-12:30 p.m.				
	12:30-1:00 p.m.				
	1:00-1:30 p.m.				
	1:30-2:00 p.m.				
	2:00-2:30 p.m.				
	2:30-3:00 p.m.				
	3:00-3:30 p.m.				
Total	N/A				N/A

TOKEN ECONOMY PROCEDURAL DOCUMENT

- **The participant will have a timer running consecutively for thirty minute intervals from 8:00 a.m. to 3:30 p.m.**
- The participant will be instructed that for **every thirty minute interval the participant completes scheduled activities without an incident of physical aggression, property destruction, and/or disruptive talk, the participant will receive verbal praise and be given one token as documented on the token card**.
- **The timer will not start or stop at any time**, even if the participant has an incident of physical aggression, property destruction, and/or disruptive talk.
- **If an incident does occur** in a thirty minute interval, the student will not earn a token. The student may earn a token during the next consecutive thirty minute interval.
- Once the participant of the research/study earns a **minimum of four tokens** the participant has the option to spend the tokens on a break of choice that requires 4 tokens or save the tokens earned for a break that is of greater value to the participant.
- If the participant opts to **save the tokens earned**, the participant may select to utilize the tokens to purchase breaks that are of greater value to the participant at any time desired by the participant as long as the participant has saved enough tokens to earn from the 4, 10, 20 token break options below.
- If the participant chooses to spend the tokens available, the participant will continue earning tokens even if it is during a break time as long as the participant breaks without an incident of physical aggression, property destruction, and/or disruptive talk.
- The participant's tokens do transfer from one day to the next. For example, if the participant has 4 tokens left over on Monday, the participant can use those 4 tokens on Tuesday morning if the desired by the participant.
- All tokens earned, spent, and tokens available for the participant to spend will be documented on the daily Token Card during Phase II Intervention B (7weeks).

Token Purchase:

- **4 Tokens (10 minutes on break selected)**
    - Walk
    - Ice tea and free time
    - **Visit therapy dog**
    - Email
    - Educational computer game
    - Free time
    - Play a board game
    - Play ground
- **10 Tokens (20 minutes on break selected)**
    - Vending machine and free time
    - Educational computer game
    - Free classroom chore pass

- o Free time
- o Free classroom assignment pass
- o Play ground
- **20 Tokens (30 minutes on break selected)**
  - o Going out to eat
  - o Free Time
  - o Purchase a book
  - o Movie theatre
  - o Educational Outing (museum, zoo, etc.)
  - o Go to the pond/park

TOKEN CARD

Date:				
Previous Balance of Tokens Available (add to Tokens Earned in the 8:00-8:30 a.m. interval):				
Staff Initials	Time	Token Earned	Tokens Spent	Tokens Available (add to Tokens Earned in the next 30 minute interval)
	8:00-8:30 a.m.			
	8:30-9:00 a.m.			
	9:00-9:30 a.m.			
	9:30-10:00 a.m.			
	10:00-10:30 a.m.			
	10:30-11:00 a.m.			
	11:00-11:30 a.m.			
	11:30-12:00 p.m.			
	12:00-12:30 p.m.			
	12:30-1:00 p.m.			
	1:00-1:30 p.m.			
	1:30-2:00 p.m.			
	2:00-2:30 p.m.			
	2:30-3:00 p.m.			
	3:00-3:30 p.m.			

IRB CONSENT FORM

```
IRB No. _____

            Expedited? _____
Reviewer's Initials  _____
Date to Reviewer
```

Wichita State University Institutional Review Board (IRB)
for the Protection of Human Subjects

Application for Approval of Research Involving Human Subjects

Please check spelling, punctuation, and grammar before submitting.
Name of Principal Investigator(s): Dr. Linda M. Mitchell, PhD
　　　(For a student project, Principal Investigator **must** be a WSU faculty member; student is
　　　listed as Co-Investigator.)

Departmental/Program Affiliation of PI: Curriculum and Instruction **Campus Box:** 28;
Phone: 978-6367; **E-mail**: linda.mitchell@wichita.edu

Name(s) of Co-Investigator(s): Jennifer Christine Luby

Co-Investigator(s) is/are: ____ Faculty Member; __*X*__ Graduate Student; _____
Undergraduate Student; Other, please specify:

Type of Project: ___ Class Project;   ___ Capstone Project; _X__ Thesis or Dissertation; ___

Funded Research; ___ Unfunded Research;   ___ Secondary Data Collection/Analysis;   ___

Program Evaluation.

Title of Project/Proposal: **An Examination of the Use of the Token Economy System in Reducing Behaviors in a Child Living with Autism**

Expected Completion Date: May, 2011　　**Funding Agency (if applicable)**:
_____

Please attach additional sheets, if necessary, with numbers of responses corresponding to those listed below.
1. Describe the research in non-technical language.

　　The purpose of this research/study is to determine if a specialized instructional/intervention
　　method improves skills of students with challenging behaviors within a special education
　　classroom setting. In this case, the instructional/intervention method **is the efficacy of the**
　　token economy system. The instruction/intervention to be investigated is the efficacy of the
　　token economy system in reducing physical aggression, property destruction, and disruptive

talk for the regular means of teaching and utilizing the new strategy. Physical aggression is defined as a forceful physical action performed as self-protective or inappropriate to the particular situation. Property destruction is defined as the throwing and breaking of objects, shoving furniture, kicking the walls, swiping task, and any other behavior that could damage property. Disruptive talk is defined as screaming, yelling, swearing, name calling, whining and/or crying, and making verbal threats toward or about others. A token economy system is defined as a form of behavior therapy that has been used in some special education programs; students are rewarded with tokens for appropriate behavior and the tokens may be cashed in for valued rewards. A single-subject research design will be utilized to gather, analyze, and report data results in the study.

2. Describe the benefits of the research to the human subjects, if any, and of the benefits to human or scientific knowledge.

   Teachers in today's classrooms are charged with using research/evidence-based strategies that increase student learning. We know that students all learn differently; it is therefore up to the teachers to investigate instructional/intervention methods that help determine what is effective for student learning. Sometimes this means providing a different method of instruction/intervention; at other times it means offering students the choices. This research/study will investigate the effectiveness of the token economy system. By determining if the specialized instructional/intervention method improves skills of students with challenging behaviors within a special education classroom setting, it can benefit not only the participant in this study but others who exhibit challenging behaviors within similar settings.

3. Describe the subjects, how the subjects are to be selected, how many are to be used, and indicate explicitly whether any are minors (under age 18 per Kansas law) or otherwise members of "vulnerable" populations, including, but not limited to, pregnant women, prisoners, psychiatric patients, etc.

   The proposed participant in this study is in the classroom of the co-investigator, and is a minor. The proposed participant is a student in the eighth grade. The subject area being considered is behavior management. The proposed participant is a student in the classroom who has been identified as a student with Autism and has challenging behaviors. For the proposed participant with special needs, all accommodations will be built into the project, and processes in place will be followed as usual, per his existing Individualized Education Program.

4. Describe each procedure step-by-step, including the frequency, duration, and location of each procedure.

   This research/study proposes to use single-subject research methods to gather, analyze and report results of the data. An A-B-A design will be implemented as described below:

All activities will take place in the co-investigator's classroom. The proposed participant's behavior will be observed and data will be collected using the behavioral data form pre-implementation of the instructional/intervention method (Phase I, Baseline, "A"). After the pre- observation and data collection, the instructional/intervention method of token economy will begin (Phase II, Intervention, "B"). The instructional/intervention method will then be withdrawn (Phase III, Return to Baseline, "A"). The research/study will last nine weeks (Phase I – 1 week; Phase II – 7 weeks, Phase III – 1 week). The results collected over the nine weeks will be depicted using the behavioral data sheet (attached).

The plans for the instructional/intervention method include the following: The individual selected for this research/study is a student whom has met the criteria of having a diagnosis of Autism Spectrum Disorder and has been enrolled at a residential school for the purpose of addressing behavioral and academic needs. The research/study will begin, Phase I Baseline A, by observation of the participant's behavior and data will be collected utilizing the behavioral data sheet the frequency of physical aggression, property destruction, and disruptive talk marked as tallies. Implementation of token economy will begin by describing to the participant on the first day of Phase II Intervention B the following: The participant will have a timer running consecutively for thirty minutes from 8:00 a.m. to 3:30 p.m. The participant will be instructed that for every thirty minutes the participant completes scheduled activities without an incident of physical aggression, property destruction, and/or disruptive talk, the participant will receive verbal praise and be given one token. The timer will not start or stop at any time, even if the participant has an incident of physical aggression, property destruction, and/or disruptive talk. If an incident of behavior does occur in a thirty minute time period, the student will not earn a token. The student may earn a token during the next consecutive thirty minute timing. Once the participant of the research/study earns a minimum of four tokens the participant has the option to 'cash in' the tokens for a break of choice under the four token lists (see attachment). If the participant opts to bank tokens or save the tokens earned, the participant may select to utilize the tokens to purchase breaks that are of greater value to the participant at any time desired by the participant. If the participant chooses to cash in tokens, the participant will continue earning tokens even if it is during a break time as long as the participant breaks without an incident of physical aggression, property destruction, and/or disruptive talk. After describing the procedure to the student, the researcher will immediately begin implementation of the instructional/intervention method the token economy system. The teacher will then monitor the participant, Phase II Intervention B, over a seven week period to determine the efficacy of the token economy system on reducing physical aggression, property destruction, and disruptive talk. Data will be recorded on a behavior data sheet and marked as tallies the frequency of physical aggressions, property destruction, and/or disruptive talk. After the seven weeks, Phase II Intervention B, Phase III Return to Baseline A will begin. On the first day of the ninth week, the participant will be instructed by the researcher that the participant will no longer be utilizing tokens to earn breaks. Rather, the participant will earn breaks as they naturally occur throughout the school day which is the same procedure the participant followed in Phase I Baseline A of this study. Data will be recorded on a behavioral data sheet and marked as tallies the frequency of physical aggression, property destruction, and/or

disruptive talk immediately after the student is informed of the break procedure. After Phase III Return to Baseline A, the researcher will collect and organize the data by creating a chart displaying the frequency of physical aggression, property destruction, and disruptive talk pre- and post- implementation of the token economy across conditions.

5. Describe any risks or discomforts (physical, psychological, or social) and how they will be minimized.

    A new learning instructional/intervention method will be introduced. In many cases, it takes a brief time for the student to adjust to the new strategy. Typical words or encouragement will be used to assuage these fears. There should be no extenuating risks or discomforts to the student. The activities selected for use appear in the research literature as viable activity options for use with student of this age group.

6. Would subjects undergo these or similar procedures (medical, psychological, educational, etc.) if they were not taking part in this research? _X__ Yes ___ No

    These activities are activities one might normally see in a classroom of students this age. They are being presented to the students in a structured way in order to obtain clear information about how effective the instructional/intervention method might be for the one selected participant in the study.

7. Describe how the subject's personal privacy is to be protected and confidentiality of information guaranteed (e.g. disposition of questionnaires, interview notes, recorded audio or videotapes, etc.).

    After gaining consent from the parent and assent from the student, data collected from the participant observation will be aggregated by number only; no names will be used in the reporting of the data. In discussions of the data, no identifying terms, labels, or other identifying marks will be used. All materials used in the research will be packaged, sealed and kept by the co-investigator in a secure file drawer. After three years, these materials will be shredded and/or destroyed.

8. Describe the informed consent process and attach a copy of all consent and/or assent documents. These documents **must** be retained for three years beyond completion of the study. Any waiver of written informed consent must be justified.

    Because the participant in the study is a minor, parent consent forms will be sent to the parent. This letter will contain all the needed information as required by the IRB process. The parent will be encouraged to allow their child's data to be used in the reporting of the findings of the project. The parent and child will be told that they are allowed to withdraw at any time with no repercussions to them at the time or in later years. These signed forms will be part of the sealed package, noted in #7 above, maintained for three years, and then destroyed.

9. Attach all supporting material, including, but not limited to, questionnaire or survey forms and letters of approval from cooperating institutions.

Attached, please find the following:
- Administrator approval: Signed letter by administrator on school letterhead acknowledging and supporting the project in the WSU student's classroom.
- Parent consent form on WSU letterhead, to be signed by the WSU faculty member and student before being sent.
- Student assent form on WSU letterhead, to be explained to the student by the parent or teacher, and signed by the student.
- Others (structure for field notes, possible interview questions, questionnaire, survey) [Make a bullet for each additional item. Omit the rows here if nothing else is needed.

The Principal Investigator agrees to abide by the federal regulations for the protection of human subjects and to retain consent forms for a minimum of three (3) years beyond the completion of the study. If the data collection or testing of subjects is to be performed by student assistants, the Principal Investigator will assume full responsibility for supervising the students to ensure that human subjects are adequately protected.

_____
_____

Signature of the Principal Investigator (Linda M. Mitchell)   Date

_____
_____

Signature of the Classroom Teacher (Jennifer Luby)   Date

_____
_____

Signature of the Parent   Date

APPENDIX E

PARENT/STUDENT ASSENT FORM

WICHITA STATE UNIVERSITY
College of Education
Department of Curriculum and Instruction

Dear Parents and Guardians;

As many of you know, I am working on my master's degree at Wichita State University. As part of the degree, we are asked to work with our students to try new and better ways of helping them learn the material in our classes. I will be conducting one of these studies in spring 2011 with the class your student is in. The purpose of this research/study is to determine if a specialized instructional/intervention method improves skills of students with challenging behaviors within a special education classroom setting. In this case, the instructional/intervention method **is the efficacy of the token economy system.** The instruction/intervention to be investigated is the efficacy of the token economy system in reducing physical aggression, property destruction, and disruptive talk for the regular means of teaching and utilizing the new strategy. Physical aggression is defined as a forceful physical action performed as self-protective or inappropriate to the particular situation. Property destruction is defined as the throwing and breaking of objects, shoving furniture, kicking the walls, swiping task, and any other behavior that could damage property. Disruptive talk is defined as screaming, yelling, swearing, name calling, whining and/or crying, and making verbal threats toward or about others. A token economy system is defined as a form of behavior therapy that has been used in some mental institutions; patients are rewarded with tokens for appropriate behavior and the tokens may be cashed in for valued rewards. A single-subject research design will be utilized to gather, analyze, and report data results in the study. I have selected your child to participate in the activities. Your child has been selected by meeting the criteria of having a diagnosis of Autism Spectrum Disorder and has been enrolled at a residential school for the purpose of addressing behavioral and academic needs. Your child is the only focus of this study. The activities that we will do are very similar to the ones we do routinely, so there should be no discomfort for your student or inconvenience to our day. All activities will take place in the co-investigator's classroom.

All activities will take place in the co-investigator's classroom. The proposed participant's behavior will be observed and data will be collected using the behavioral data form pre-implementation of the instructional/intervention method (Phase I, Baseline, "A"). After the pre-observation and data collection, the instructional/intervention method of token economy will begin (Phase II, Intervention, and "B"). The instructional/intervention method will then be withdrawn (Phase III, Return to Baseline, "A"). The research/study will last nine weeks (Phase I

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– 1 week; Phase II – 7 weeks, Phase III – 1 week). The results collected over the nine weeks will be depicted using the behavioral data sheet (attached).

The research/study will begin, Phase I Baseline A, by observation of the participant's behavior and data will be collected utilizing the behavioral data sheet the frequency of physical aggression, property destruction, and disruptive talk marked as tallies.

Implementation of token economy will begin by describing to the participant on the first day of Phase II Intervention B the following: The participant will have a timer running consecutively for thirty minutes from 8:00 a.m. to 3:30 p.m. The participant will be instructed that for every thirty minutes the participant completes scheduled activities without an incident of physical aggression, property destruction, and/or disruptive talk, the participant will receive verbal praise and be given one token.   The timer will not start or stop at any time, even if the participant has an incident of physical aggression, property destruction, and/or disruptive talk. If an incident of behavior does occur in a thirty minute time period, the student will not earn a token. The student may earn a token during the next consecutive thirty minute timing. Once the participant of the research/study earns a minimum of four tokens the participant has the option to 'cash in' the tokens for a break of choice under the four token lists (see attachment). If the participant opts to bank tokens or save the tokens earned, the participant may select to utilize the tokens to purchase breaks that are of greater value to the participant at any time desired by the participant. If the participant chooses to cash in tokens, the participant will continue earning tokens even if it is during a break time as long as the participant breaks without an incident of physical aggression, property destruction, and/or disruptive talk. After describing the procedure to the student, the researcher will immediately begin implementation of the instructional/intervention method the token economy system. The teacher will then monitor the participant, Phase II Intervention B, over a seven week period to determine the efficacy of the token economy on reducing physical aggression, property destruction, and disruptive talk. Data will be recorded on a behavior data sheet and marked as tallies the frequency of physical aggressions, property destruction, and/or disruptive talk. After the seven weeks, Phase II Intervention B, Phase III Intervention A will begin.

On the first day of the ninth week, the participant will be instructed by the researcher that the participant will no longer be utilizing tokens to earn breaks. Rather, the participant will earn breaks as they naturally occur throughout the school day which is the same procedure the participant followed in Phase I Baseline A of this study. Data will be recorded on a behavioral data sheet and marked as tallies the frequency of physical aggression, property destruction, and/or disruptive talk immediately after the student is informed of the break procedure.

After Phase III Return to Baseline A, the researcher will collect and organize the data by creating a chart displaying the frequency of physical aggression, property destruction, and disruptive talk pre- and post- implementation of the token economy system. Any changes in the described challenging behaviors will be calculated between Baseline, Intervention, and the withdrawal of the Intervention. Hopefully, we will find a better way to help the students learn. Please consider allowing your student to participate.

Any information gathered during this time in which your student can be identified will remain confidential. The paper I must write for my class will not include any student names or other identifying information. Each student will be assigned a number, and any summary of the results will be completed using the numbers of the students.

Participation in this study is entirely voluntary. Your decision whether or not to provide consent for your student to participate will not affect your future relations with Heartspring or Wichita State University. In addition, if you agree to allow your student's scores and notes to be used in this study and change your mind for any reason, you are free to withdraw your student from the study at any time without penalty.

 If you have any questions about this project, you can contact me at Jennifer Luby, 8700 E. 29th St. N. Wichita, KS 67226, 316-634-8700 and jluby@heartspring.org. Or, you may contact my professor, Dr. Linda M. Mitchell, 116 Corbin Education Center, Wichita State University, 316 978-6367, or by email (linda.mitchell@wichita.edu). If you have questions pertaining to your rights as a research subject, you can contact the Office of Research Administration at Wichita State University, Wichita, KS 67260-0007, and 316-978-3285.

You are under no obligation to have your student participate in this study. Your signature indicates that you have read the information provided above and have voluntarily decided to allow your student to participate. You will be given a copy of these forms to keep.

Thank you for your consideration of this project.

Sincerely,

_____   _____
Signature of the Principal Investigator (Linda M. Mitchell)   Date

_____   _____
Signature of the Classroom Teacher (Jennifer Luby)   Date

_____   _____
Signature of the Parent   Date

WICHITA STATE UNIVERSITY
College of Education
Department of Curriculum and Instruction

Student Assent Form

I have been told that my parent(s) or guardian(s) have given permission for me to participate, if I want to, in trying out new ways to learn things in my classroom. When I sign this form, I know my teacher will be able to use my work and notes to write his paper for her class at the Wichita State University.

I know that I can decide against this at any time I want to and it will be okay.

_____   _____
Name   Date