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The Effects of an Intangible Token Economy on Off-Task Behavior of Kindergarten Students

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Student behavior can be a strong predictor of a child's academic success. When inappropriate behavior occurs in the classroom, it interferes with the learning process of every student involved. The offender as well as the remainder of the class population has been disrupted and brought off task (Alberto & Troutman, 1995; Parsonson, 2012). The teacher can also become discouraged and frustrated. Dealing with a high frequency of behavior problems is overwhelming, even for veteran teachers. When teachers must respond to numerous displays of inappropriate behavior, instruction time is negatively impacted and lessened.

Bullis and Cheney (1999) found that only ten to twenty-five percent of students with Emotional and Behavioral Disorders (EBD) enroll in post-secondary education, compared to fifty-three percent of the typical population. These statistics are reflective of students that have been identified as needing special education services. However, the students identified is not inclusive of all students truly in need of services. The Southern Poverty Law Center (2007) reports that up to eighty-five percent of children in juvenile detention facilities have disabilities that make them eligible for special education services, yet only thirty-seven percent had been receiving any kind of services in their school. There are many factors that can contribute to why a student does not receive services while in school. Despite the reason why, it is a tragedy for any child with a disability to not receive the help and support he/she needs and deserves. But, it holds true that all students displaying behavior issues need some type of intervention whether they are receiving special education services or not.

According to the Data Resource Center for Child and Adolescent Health (2005/2006), more than two million young people in the United States have emotional/behavioral disabilities

(EBD). The National Center on Inclusive Education states that students with EBD have the worst graduation rate of all students with disabilities. Nationally, only forty percent of students with EBD graduate from high school, compared to the national average of seventy-six percent. Students with EBD are three times as likely as other students to be arrested before leaving school. These students are twice as likely as other students with other disabilities to be living in a correctional facility, halfway house, drug treatment center, or on the street after leaving school. Lastly, students with EBD are twice as likely as students with other disabilities to become teenage mothers. Sadly, the amount of students diagnosed with behavior disorders continues to increase (Trout, Epstein, Nelson, Synhorst & Hurley, 2006).

Examples of inappropriate behavior can cover a wide range. However, the focus of this research study is not on severe behaviors such as possession of weapons. Instead, this research study focuses on common disruptive behaviors that interfere with learning. Examples of such behaviors include inappropriate talking, out of seat, poor posture, and being off-task during teacher instruction. Another inappropriate behavior that is more prevalent in kindergarten is the lack of keeping hands and feet to oneself. Nelson, Benner, Lane and Smith (2004) investigated the impact of the behaviors of students with EBD on learning. Results from Nelson et al. revealed that elementary and secondary group scores were well below the 25th percentile on reading, math, and written expression measures. Further, findings also suggested that behavioral variables were predictive of broad reading and broad written expression scores. The more behavior referrals a child has or the more intense the behavior issues are, the worse the reading and writing scores prove to be. These behaviors demand some type of behavior management system that will result in them occurring as infrequently as possible. Research has suggested that

it is most effective to manage inappropriate behaviors through proactive prevention rather than reactive punishment.

Review of Literature

Token Economy Systems

There is a multitude of behavior management systems and behavior interventions utilized by teachers every day. Parsonson (2012) studied a variety of evidence based classroom behavior management strategies including the good behavior game, noise management, peer support, managing transitions, enhancing engagement, relationship building, and token economies. While he noted positives that stemmed from all of these behavior management techniques, the token economy system stood out as one of the most successful. Token economies utilize specific praise and a direct positive reward when a positive behavior is observed. The specific praise allows the child to know exactly what he/she did to earn the token. This specificity allows the child to know exactly which behavior to repeat. Receiving a token immediately upon exhibiting the positive behavior also reinforces the wanted behavior. As Parsonson (2012) states, the goal of teaching behavior to students is to teach them how to self-regulate. Teachers strive to build intrinsic motivation. But, to do this, extrinsic motivators are the first tool to use, thus a token economy becomes the best choice.

Hopewell, McLaughlin, and Derby (2011) emphasize that evidence-based practices for both social and academic skills can be a key for finding success for students. Parsonson (2012) confirmed that token economy systems are evidence-based practices. Token economies aim to change behavior through positive reinforcement. Tangible tokens are given when the desired behavior is exhibited. The behaviors are reinforced by a backup reinforcer when the tokens are cashed in for some type of larger reward that is chosen by the student. Most token economies

are structured so that the tokens are given out heavily at the beginning of implementation so that students get used to the feeling of earning a reward. The next phase of the token economy requires for tokens to be slowly decreased. The goal is that students will still crave the feeling of being rewarded, but will begin to look for ways to meet that need intrinsically.

Token economies have been effective across various grade levels, school populations, and school behavior (Kazdin, 1982; McLaughlin & Williams, 1988; O'Leary & Drabman, 1971; O'Leary & O'Leary, 1976; Williams, Williams, & McLaughlin, 1988). Concerning grade levels, token economies have been effective with pre-school age students to college undergraduates. Boniecki & Moor (2003) used a token economy to increase classroom participation in a college undergraduate psychology class. The increase in class participation during implementation was immense. The researchers included a maintenance phase in their research. This phase did not maintain the great results shown in the implementation phase. One argument for the lack of maintenance is that the implementation phase was too short preventing a permanent change in behavior from being possible. Moving to the other end of the age spectrum, token economies have also been effective with pre-school students. When implemented in pre-school classes, token economies were effective and results were maintained during withdrawal, follow-up, and maintenance phases (Filcheck, McNeil, Greco, & Bernard, 2004; Tiano, Fortson, McNeil, & Humphreys, 2005). These are examples of the wide range of students that can be impacted by a token economy system. As previously discussed, Boniecki and Moor (2003) utilized a rather short implementation phase in their college course (equaling to the equivalent of about two days in elementary school) yielding less than plausible results during the maintenance phase. The impact of the short implementation phase has inspired the current study to utilize a lengthier implementation phase. The research completed with pre-school students yielded successful

results during follow-up and maintenance phase. Tiano et al. implemented their intervention for three weeks. Filcheck et al. implemented their intervention for almost six weeks. Based on the latter two studies, the current study will use a three week implementation phase.

The previous mentioned examples also demonstrate the flexibility allowed with a token economy intervention. Boniecki and Moor (2003) and Filcheck et al. (2004) implemented token economies as a whole group intervention. Both studies showed positive results. Tiano et al. (2005) utilized the token economy intervention with only three children who were frequently displaying disruptive behavior. According to the results of these studies, the number of students participating in the token economy intervention does not impact its effectiveness.

Secondary Benefits of Token Economy Systems

There are often secondary benefits that result from the use of a token economy. Klimas and McLaughlin (2007) used an individual token economy to improve the behavior of a six year old kindergarten student who was enrolled in a self-contained special needs classroom. The token economy intervention was significantly successful in improving the child's behavior. The improvements continued and the child was placed back into a general education classroom where she continues to thrive using the token economy. All members of the research team, teachers, parents, and child (participant) were very happy with the results of the study.

Another secondary benefit of a token economy is the improvement in academics that often accompanies behavior improvements. When a student is repeatedly misbehaving, he/she is disrupting his/herself from learning. Disruptive behaviors are often the first target of a token economy intervention. When the disruptions decrease, the child is able to retain more of the academic content. Other times, academic improvement may be the main goal. In this case, researchers have paired a token economy with the academic intervention in hopes of eliminating

the disruptive behaviors that are attributing to the lack of academic performance. The addition of the token economy intervention often allows for more dramatic improvements from the academic intervention.

Hopewell and McLaughlin (2011) paired a token economy with a reading intervention. The main goal was to improve reading skills. The token economy was used to improve task focus. The reading intervention was very successful with all participating students. The authors note of the great, positive impact of the token economy. The token economy led to more focus on the reading intervention which led to more reading confidence which spilled into improved performance in other subject areas. The token economy also led to the students being more willing to work with any teacher. The token economy was noted by the authors to be the perfect choice to pair with the reading intervention.

Effects of Types of Tokens

Research on token economies have also studied the effects of certain types of tokens. Carnett et al. (2014) studied the effects of a perseverative interest-based token economy on a child with autism. The child had a perseverative interest in puzzles. The researchers compared the effect of a token economy using general tokens (pennies) to the effect of a more perseverative token economy using puzzle piece shaped tokens. While both versions of the token economy were successful in decreasing the unwanted behavior, the perseverative interest based token yielded more significant results.

While research continues to determine the effects manipulating tangible tokens, very little research is available on intangible tokens. Perhaps, until recently, there have been few options for using intangible tokens. Class DoJo is a website that allows for intangible tokens. Class DoJo is a behavior management tool quickly rising in popularity across the country. With the

mandated PBIS initiative sweeping the country, teachers are searching for time efficient and effective behavior management tools that allow for an emphasis on positive feedback rather than negative feedback or punishment. According to the Class DoJo webpage, Class DoJo is being actively used in two-thirds of classrooms in the United States and in 180 countries (Fast Facts). Class DoJo has reached over ninety percent of school districts in the United States and can be translated and used in over thirty-five languages. Class DoJo has received numerous awards including the Education Innovation Award and 30 under 30: Education award for two years.

In Class Dojo, the home page for each class displays an avatar for each child. To receive or lose a token, the avatar is clicked. Once a student's avatar is selected, the teacher clicks the specific positive or negative behavior that was observed. If the observed behavior was positive, the avatar is given a point (which is added to the total shown next to the avatar). There is also a pleasant, exciting noise that chimes when a point is given. If the observed behavior is negative, the avatar loses a point from his/her total. There is a sad noise made when a point is taken away. For the purposes of this study, tokens will only be rewarded, never taken away. Research is needed to determine if such intangible tokens work as effectively as tangible tokens. Therefore, the purpose of this research is to determine the effects of an intangible token economy on the behavior of kindergarten students with and without disabilities. Two research questions were posed, including:

1. Will an intangible token economy be effective in decreasing off task behavior of kindergarten students with and without disabilities?

2. If the token economy is effective, will the results be maintained?

Method

Setting and Participants

Setting. The school hosting this research study is located in central Georgia. It is a Title One school and has 78% percent of its students receiving free or reduced priced lunch. The school is a part of a rural community and is located on the outskirts of its county. There are 776 students in grades kindergarten through fifth grade. The school demographics are as follows: 50% White/Caucasian, 49% Black/African American, and 1% Hispanic. The gender demographics are 49% male and 50% female. There are 95 students enrolled in the Program for Exceptional Children including 35 students identified as gifted.

This study took place in a kindergarten inclusion class. The students work in differentiated small groups for phonics instruction each day from 9:00-9:30. During this time period, all 5 participants of this study receive the same phonics instruction. Students are receiving on grade level instruction, but at a slower pace than other groups. Specifically, these students are focusing on learning one or two letters a week while other groups are learning four letters per week or are learning to sound blend CVC words. Research was conducted during the middle twenty minutes of the thirty minute time span, specifically 9:05-9:25. Waiting five minutes to begin collecting data allowed students to transition to their seats, settle in, and begin their work. Also, the last five minutes are often spent cleaning up, reviewing with just one or two students, and transitioning to the next task. Collecting data during the first five or last five minutes would have skewed the data as student expectations are not the same at these times. These phonics sessions are conducted Monday through Thursday, expect for holidays or days in which a special assembly or event was scheduled during the regular meeting time. Assessments are given on Fridays.

The classroom teacher was a state certified, highly qualified early childhood education teacher with a Master of Science degree in early childhood education and is pursuing a specialist degree in Special Education. The teacher also had a special education teacher who served the class during reading and phonics instruction and a paraprofessional who assisted in all functions of the classroom.

Participants. This research study will include five participants; four are male and one is female. Three are white/non-Hispanic, and two are African American. Two of the participants, Aaron and Nate, have an Individualized Education Program (IEP). These two students are identified as having a significant developmental delay (SDD). They both are also diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). The other three students, Jake, Jesse, and Natalie, are not in the Program for Exceptional Children (PEC), but they are struggling learners. These three students are on Tier 3 in the RtI process for reading and math. Two of them, Jesse and Jake, have been diagnosed with ADHD. Natalie is the only participant without an identified attention disorder. All of these students are struggling to master letter recognition, letter sound production, and beginning sound identification. They lack focus and are easily distracted which directly impacts their learning. The criteria for participant selection was to be a struggling learner and to exhibit a seemingly high amount of off-task behaviors that are impacting academic performance and/or task completion.

Aaron. Aaron is a kindergarten African American male diagnosed with SDD. He has behavioral issues that consist of in-attention, inactivity, staring off, and poor social adjustment. He rarely completes a task and requires constant redirection. He frequently sits idle in his seat not working or talking. When he does work, he is very easily distracted. He requires extra time when testing. Nate is a repeating kindergarten Caucasian male diagnosed with SDD. He has

behavioral issues that consist of hyperactivity and poor social adjustment. He can be easily distracted and attempts to talk to the teacher throughout instruction. His talking is often off-topic and does not align with the current class topic.

Jake. Jake is a kindergarten Caucasian male diagnosed with ADHD. He is not in the Program for Exceptional Children. He was recently declared as homeless. He is not living with his family and only receives his ADHD medicine a few days a week if that often. He exhibits hyperactivity, speech and language delays, poor social adjustments, and is easily distracted. He did not attend pre-school or an academic oriented daycare. He is on Tier 3 and is being referred for testing to determine if he qualifies for special education services.

Jesse. Jesse is a kindergarten Caucasian male diagnosed with ADHD. He is not in the Program for Exceptional Children. He is easily distracted and exhibits hyperactivity. He did not attend pre-school or an academic oriented daycare. He started with an extremely low academic baseline, but has shown significant academic growth. He receives his medicine every day. He is on Tier 2.

Natalie. Natalie is a kindergarten African American female. She does not have a current diagnosis, but is currently on Tier 3 and has been referred for testing to determine if she qualifies for special education services. She exhibits behavioral issues such as being easily distracted and staring off blankly instead of completing assignments. She did not attend pre-school or an academic oriented daycare.

Research Design and Rationale

This research study will utilize an ABAB design. Tawney and Gast (1984) explain that using an ABAB design allows the researcher(s) to more precisely determine the effectiveness of the intervention due to repeating the last two phases with the same participants and measuring

the same behaviors. The researcher monitored off-task behaviors displayed by each participant during the initial phase (A) of collecting baseline data. During the next phase (B), each participant received the intervention and the researcher monitored off-task behavior. During the third phase (A), the intervention was removed. Lastly, during the final phase (B), the intervention was implemented again. The latter two phases strengthen the internal validity of the intervention. This research design was further chosen because it provides stronger proof that the change in the dependent variable is because of the independent variable. This research design also allows for the intervention to be manipulated during the second phase if the first phase was unsuccessful in impacting the dependent variable. However, there was no manipulation of the intervention needed.

Dependent Measures. The dependent variable is the number of times each student is off-task during small group reading instruction. Off-task behaviors are defined as behaviors exhibited by a participant that are inappropriate and conflict with classroom rules and procedures such as (a) staring blankly (b) avoiding completion of assignments, (c) speaking to peers during instruction, (d) speaking to teacher about off-topic matters, (e) making inappropriate, disruptive noises, and (f) playing or fiddling with objects. Each of the behaviors listed above are defined as follows:

- Staring blankly includes looking at the ceiling or anywhere around the room that is not the task at hand. It does not necessarily involve talking or playing but is more often characterized by daydreaming or the student seeming to have "spaced out."
- Avoiding completion of assignments includes the need for constant redirection to stay on task. It occurs when students are given numerous modifications,

accommodations, and teachers are scaffolding the assignment, but the student still does not complete the work.

- Speaking to peers during instruction includes verbally communicating with another classmate about an unrelated topic during teacher instruction or before all parties have completed their assignment(s).
- Speaking to teacher about an unrelated topic includes disrupting teacher instruction or skill practice time to discuss or comment on something that does not pertain to the lesson at hand.
- Making inappropriate, disruptive noises includes any noise that disrupts the lesson or other students from working including, but not limited to pencil tapping, beating objects, whistling, and clacking tongue. This behavior is also defined as occurring when a participant has ceased participation in the lesson in order to create the distracting noise(s).

On-task behavior is defined as being focused and participating during instruction and focused and actively working toward completion of the assignment. On-task behaviors include the following (a) focused during instruction, (b) participating during instruction, (c) focused during assignment, and (d) actively working toward completion of the assignment. Each of the behaviors listed above as defined as follows:

- Focused during instruction includes participants' eyes are on the teacher and not speaking unless participant has a relevant question he/she needs clarified to better understand the instruction. Also, comments that are on-topic and that are not disrupting are allowed because it is unreasonable to expect 5 or 6 year old

students to sit quietly for more than 5 minutes. Also, on-topic comments indicate that the student is focused and listening to instruction.

- Participating during instruction include students answering questions when called on or when posed aloud to the whole group. Also, during letter and sound practice drill, student is repeating the letter name and sound after the teacher says each letter.
- Focused during the assignment includes students looking at their assignment and/or asking questions about the assignment. Students should be using what they have learned to help them complete the assignment, not mindlessly scribbling, circling, or doodling on paper.
- Actively working toward completing the assignment includes students working until assignment in completed. Students attain help if and when it is needed, but they continue to work toward completion. Students do not sit idle if they reach a confusing point in the assignment. It should be apparent the student's current goal is to complete the assignment, not avoid it until time is up.

Off-task behaviors were measured through observation. The special education teacher instructed the students, answered questions, and acted as the sole teacher of the group. This is typical of everyday routines and procedures of this classroom. The researcher observed from outside of the group. A tally was made for each off-task behavior observed.

Materials. Materials used to collect data were a pen or pencil, clipboard, and data collection sheet. The data collection sheet had each of the five participants listed in a column down the left-hand side. The top row had four five minute time intervals totaling twenty minutes (i.e. 9:05-9:10, 9:10-9:15, etc). When an off-task behavior was observed, a tally was made for

that child in the correct time slot box. This method of data collection was used throughout all four phases (ABAB) of the research. Other materials include the Class DoJo website and a Smart phone with the Class DoJo app downloaded onto it. Also, each participant requires an avatar previously set up for him/her prior to introduction of the intervention.

Interobserver Agreement. The researcher and the special education teacher were the primary observers of off-task and on-task behaviors. The researcher trained the special education teacher prior to the beginning of data collection. The special education teacher was trained on what behavior count as on-task or off-task. The researcher and the special education teacher worked together to determine when off-task behavior occurred. Instruction was not interrupted to discuss behaviors, but the special education teacher would give the researcher a nonverbal signal when she noticed off-task behavior and if the researcher agreed, a tally would be made of the data collection sheet. However, the researcher did not have to notify or receive confirmation from the special education teacher. The special education teacher could not be expected to notice all behavior as she was the primary teacher of the group. Students were instructed not to acknowledge the researcher giving her the freedom to solely observe behavior.

The researcher and special education teacher swapped roles for 3 of the 12 total data collection days. The switching of roles occurred sporadically throughout the research phases. The data collected by the special education teacher was on trend with the researcher's data 100% of the time.

Procedures

Baseline I. During the initial baseline phase, the researcher recorded the participants' off-task behaviors. Baseline data was collected for three days at which time baseline could be established due to the stability and established trend for each participant's behavior. Baseline

was collected a month into the school year. Waiting a month to collect initial data allowed students to become comfortable and thus gave a more accurate baseline for each participants' behavior. Students often behave differently the first month or so of school until they feel safe and comfortable with their teachers and within the classroom and school. Waiting a month to begin baseline data collection increased internal validity by eliminating incorrect behavior data that may have skewed the results.

Training. Once baseline was established, the participants were trained in how the intervention, Class DoJo, will work. The whole class was trained together as Class DoJo will be used with all students in the class. The researcher demonstrated how students can earn points by touching the avatar on the computer, SMARTBoard, or a phone. This initial training took about 5 minutes first thing on a Monday morning. It was also explained to students that at the end of each week, the points may be traded in for a prize of their choice off of the prize sheet. Further training was implemented that same day at the start of small group instruction. Specifically, the five participants were trained in how they would receive DoJo points by a teacher touching their avatar on the phone that was sitting in the middle of the table they were working at. The sound was turned up on the Smart phone as to allow students to hear the pleasant chime that rings when a point is rewarded. The chime provides audible feedback that a student is meeting expectations. The other students hear the chime as well and are given an audible reminder to self-monitor whether or not they are currently meeting expectations. Expectations were demonstrated and sample points were given so students would understand exactly how they earn points. Training was then continued for two weeks to allow for students to be accustomed to how Class DoJo works and how they are able to earn and use their points. Allowing this two-week adjustment

period, increased internal validity by eliminating results that would have been influenced by the novelty of the intervention.

Intervention I. The first intervention phase was implemented for two weeks. However, by the end of these two weeks, students had been using Class DoJo for a total of four weeks including the training phase. There were no changes made from the training phase to the first intervention phase except for the reminders and explanations of how things work was eliminated. Expectations of student behavior were still stated at the beginning of the lesson. Intervention data was collected on three randomly chosen days over the two week implementation phase. The researcher and special education teacher switched roles during one of these three days in order to increase external validity and interobserver agreement.

Baseline II. Once the two week implementation phase was over and a trend was established, the intervention was removed. Class DoJo was removed from the whole class for the entirety of a two week timespan. The small group of participants did not receive the intervention during the phonics lesson nor any other time during the day. Intervention data was collected on three randomly chosen days over the two week removal phase. The researcher and special education teacher switched roles during one of these three days in order to increase external validity and interobserver agreement.

Intervention II. The intervention was reinstated for a second time. The same procedures were used as those employed in the first intervention phase. Data was then collected over a two-week timespan. The intervention was not faded out due to its success with the participants as well as with overall behavior in the classroom. It is imperative to have a positive reinforcement system in every classroom, and Class DoJo serves as a modern, technologically

savvy version of a positive reinforcement intangible token economy. The classroom teacher chose to continue using Class DoJo as the main form of behavior management of the classroom.

Data Collection and Analysis

Data collection sheets remained with the researcher at all times. Results from each session were reviewed with participants during an individual conference with each. Future goals and a plan for improvement was discusses as was praise for improvements shown. If there was no improvement, each conference still ended on some form of a positive note and with a specific piece of encouragement.

As previously stated, data was collected for each participant over a 20 minute timespan that was divided into four 5 minute segments. An average was determined for the amount of off-task behaviors per 5 minutes. The average was determined by adding up the total amount of tallies and dividing by 4. Each average is graphed.

The research questions, related data collection, and exactly how the research questions will be answered are as follows:

1. Will an intangible token economy be effective in decreasing off-task behavior of kindergarten students with and without disabilities?

This question will be answered by the first half of the research collection (the first AB of the ABAB design). Baseline data will be collected of the amount of times each student is off task. This data will then be compared to the number of off-task behaviors once the intervention is implemented.

2. If the token economy is effective, will the results be maintained?

This question will be answered by the second half of the research collection (the second AB of the ABAB design). The intervention will be withdrawn and data will be collected during the

withdrawal phase. The intervention will then be reinstated and data will be collected to compare to the withdrawal phase. This later phase of data collection will help determine if the intervention can be maintained.

Results

This study aimed to answer the following questions.

1. Will an intangible token economy be effective in decreasing off task behavior of kindergarten students with and without disabilities?
2. If the token economy is effective, will the results be maintained?

To answer the first question, baseline data was collected by observing the number of times participants were off-task during twenty minute long small-group reading lesson with a special education teacher. After baseline was established, an intangible token economy, namely Class DoJo (an online, interactive website), was introduced. After two weeks, the intervention was removed. Baseline II phase was conducted for two weeks. Then, the intervention was reintroduced and the Intervention II phase was conducted. Students were observed for the entire twenty minute lesson. Each time a student fell off-task it was recorded. During intervention phases, students received an intangible token for every three minutes he/she remained on-task. To answer the second question, a second baseline and a second intervention phase was conducted.

This study shows that the intangible token economy reduced the number of off-task behaviors occurring in five kindergarten students who are struggling learners. Figures 1-5 show the results for the following five students: Jesse, Natalie, Nate Aaron, and Jake. Table 1 shows the mean of Baseline I and Baseline II and Intervention I and Intervention II for each participant.

During each of the four sessions (Baseline I, Intervention I, Baseline II, and Intervention II), Jesse was observed over three sessions. During Baseline I, his mean was .33 with a range of 0-1. During Intervention I, his mean was 0 with a range of 0-0. During Baseline II, his mean was 1 with a range of 0-3. During Intervention II, his mean was 1 with a range of 0-2. There was a reduction of off-task behaviors during Intervention I. Off-task behaviors increased during Baseline II. The mean of Baseline II and Intervention II did not change, but the range decreased in Intervention II. Figure 1 displays this relationship.

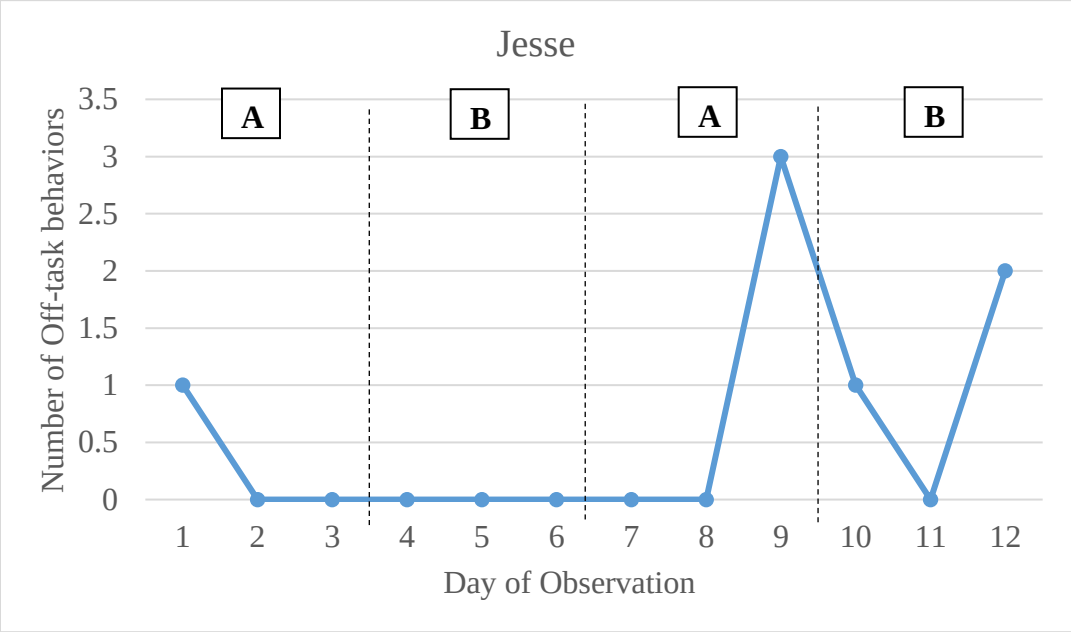

Figure 1. Jesse's off-task behavior with and without intervention.

During Baseline I, Intervention I, and Baseline II, Natalie was observed over three sessions. During Intervention II, Natalie was observed two times due to an absence. During Baseline I, her mean was 4 with a range of 0-7. During Intervention I, her mean was .66 with a range of 0-1. During Baseline II, her mean was 3 with a range of 0-5. During Intervention II, her mean was .5 with a range of 0-1. There was a reduction of off-task behaviors during

Intervention I. Off-task behaviors increased during Baseline II, but were reduced during Intervention II. Figure 2 displays this positive relationship.

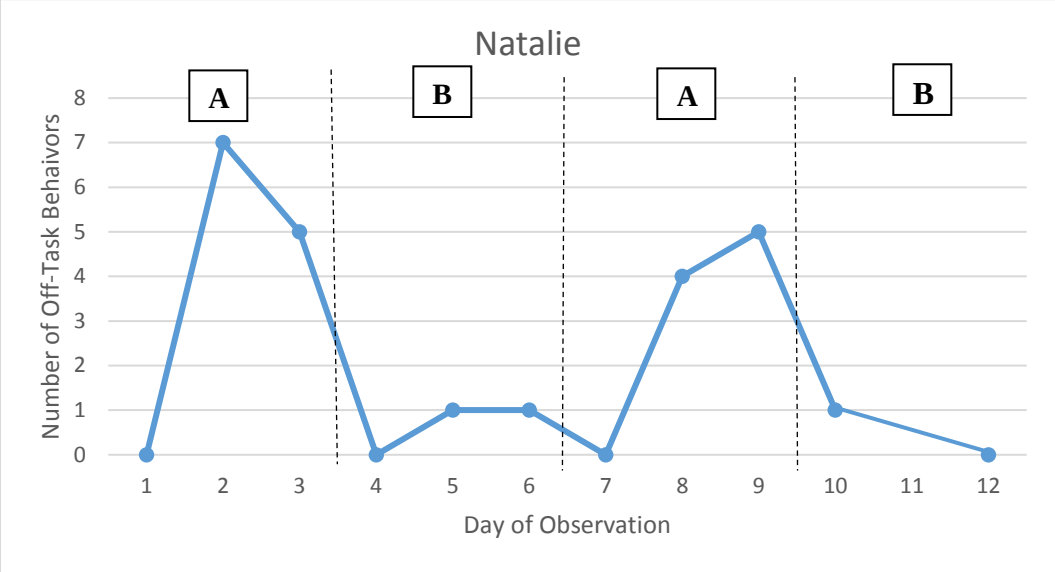

Figure 2: Natalie's off-task behavior with and without intervention.

During each of the four sessions (Baseline I, Intervention I, Baseline II, and Intervention II), Nate was observed over three sessions. During Baseline I, his mean was 5 with a range of 3-8. During Intervention I, his mean was 1.66 with a range of 1-2. During Baseline II, his mean was 2.33 with a range of 0-5. During Intervention II, his mean was 1.66 with a range of 0-4. There was a reduction of off-task behaviors during Intervention I. Off-task behaviors increased during Baseline II, but were reduced during Intervention II. Figure 3 displays this positive relationship.

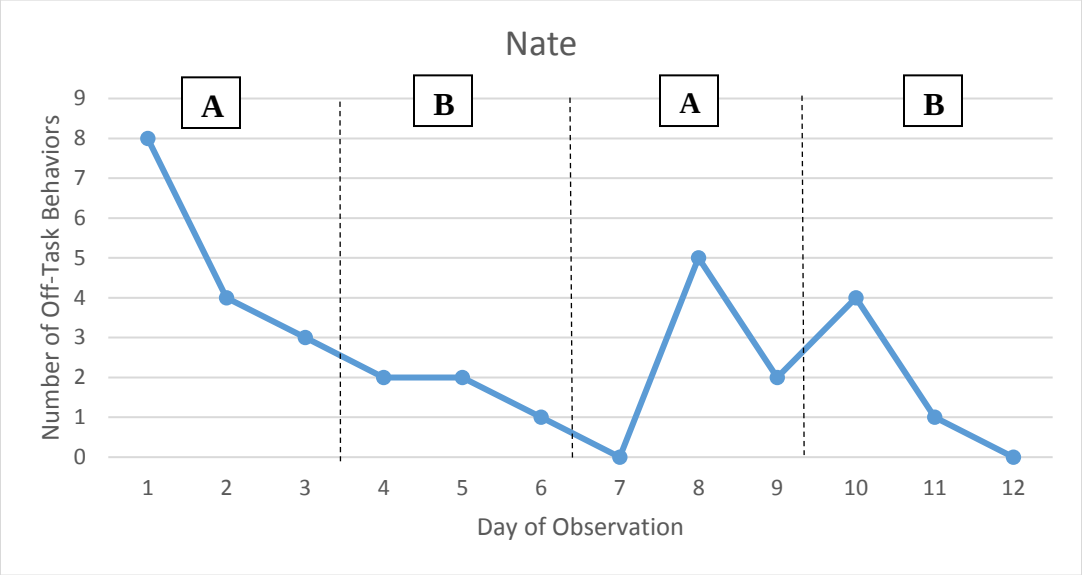

Figure 3: Nate's off-task behavior with and without intervention.

During each of the four sessions (Baseline I, Intervention I, Baseline II, and Intervention II), Aaron was observed over three sessions. During Baseline I, his mean was 8.33 with a range of 6-13. During Intervention I, his mean was 2.33 with a range of 0-6. During Baseline II, his mean was 3.33 with a range of 0-5. During Intervention II, his mean was 2.33 with a range of 2-3. There was a reduction of off-task behaviors during Intervention I. Off-task behaviors increased during Baseline II, but were reduced during Intervention II. Figure 4 displays this positive relationship.

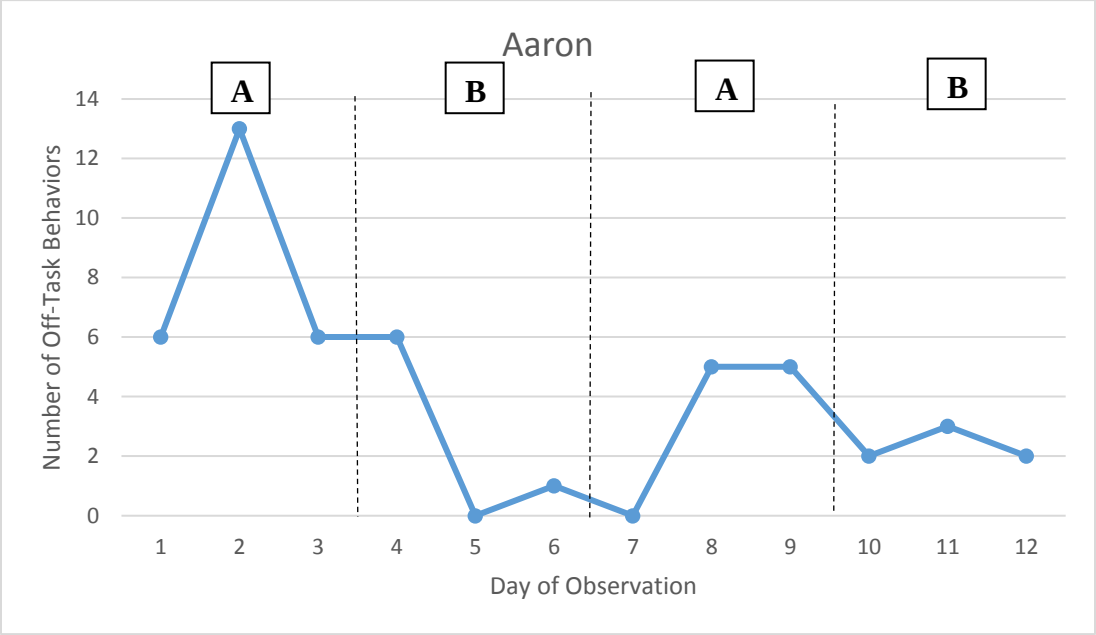

Figure 4: Aaron's off-task behavior with and without intervention.

During Baseline I, Intervention I, and Baseline II, Jake was observed over three sessions. During Intervention II, Jake was observed two times due to an absence. During Baseline I, his mean was 10.33 with a range of 8-14. During Intervention I, his mean was .66 with a range of 0-1. During Baseline II, his mean was 2 with a range of 0-3. During Intervention II, his mean was 0 with a range of 0-0. There was a reduction of off-task behaviors during Intervention I. Off-task behaviors increased during Baseline II, but were reduced during Intervention II. Figure 5 displays this positive relationship.

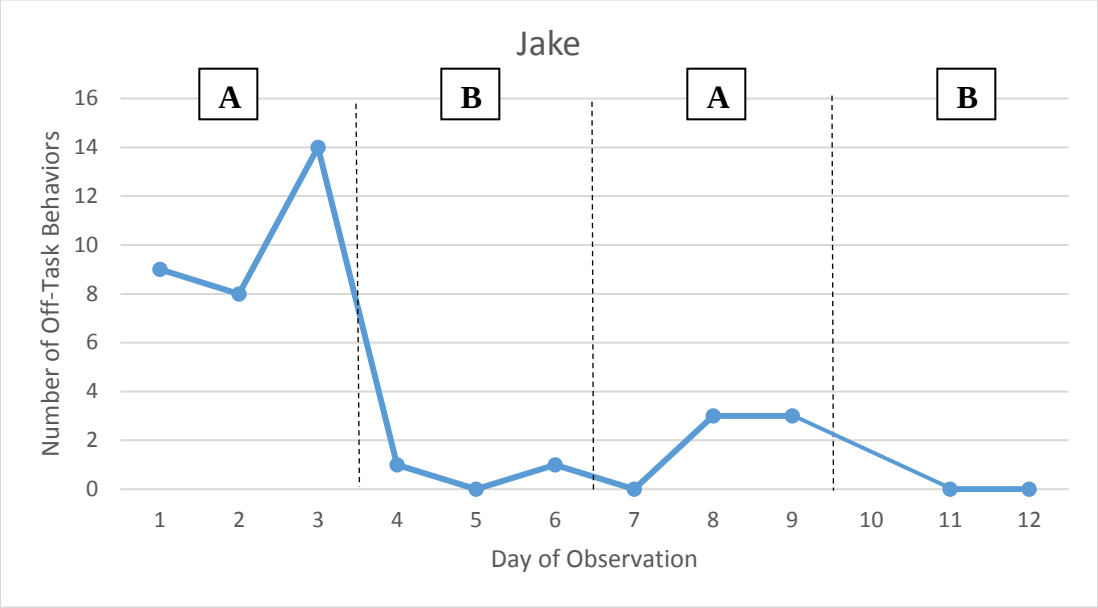

Figure 5: Jake's off-task behavior with and without intervention.

Table 1 summarizes the results of this study. It displays the mean of Baseline I, Intervention I, Baseline II, and Intervention II for each participant. This table also shows that each participant's off task behaviors decreased during Intervention I, increased during Baseline II, and was once again reduced during Intervention II.

Table 1

Summary of Results

Participant	Baseline I Mean	Intervention I Mean	Baseline II Mean	Intervention II Mean
Jesse	.33	0	1	1
Natalie	4	.66	3	.5
Nate	5	1.66	2.33	1.66
Aaron	8.33	2.33	3.33	2.33
Jake	10.33	.66	2	0

Discussion

Summary

Based on the results of this study, the intangible token economy was considered to be successful. Although there are two students, Aaron and Jake, who show a more dramatic decrease in off task behavior when using the intervention, all students were positively affected by the intervention. All participants showed a decrease in off task behaviors during intervention phases. During the second baseline phase, data shows that off task behaviors increased, but four out of five students' behavior did not reach original baseline means. Once the intervention was implemented the second time, off task behaviors dropped once again.

Conclusions

The results of this study adds to the current body of literature related to token economies by extending the findings to intangible token economies, specifically the technology based tool, Class DoJo. Research shows that students who display inappropriate behaviors, such as chronic

off task behavior, also perform lower than their peers academically (Alberto & Troutman, 1995; Parsonson, 2012). According to the data, using Class DoJo appears successful in decreasing inappropriate behavior so that the students' main focus and the main focus of those around them can be their academic work.

The results of this study are consistent with Boniecki and Moor (2003) and Filcheck et al. (2004). These studies (both of which were used whole group) were successful when implementing token economies as was the current study. This study is also consistent with Tiano et al. (2005) who used the token economy with a small group of students as did the current study. The data from this study also further supports Parsonson's (2012) claim that token economies are an evidence based practice. Furthermore, the findings of this study support the extension of the variety and flexibility of successful token economies to include an *intangible* token economy. In conclusion, the findings of this study support extant theoretical positions.

Limitations

One limitation of this study is found in its design. Single subject designs lack generalizability. External validity is compromised as the results cannot be generalized to the public as a whole. A second limitation to this study is that all four of the five participants are male. This misrepresentation of the class demographics further limits the generalizability of the results to the classroom and to the public. Lastly, external validity was compromised by the absence of two students. Although a trend was able to be established, the lack of a data point for each student may or may not have skewed the data.

Recommendations for Future Research

This study can be replicated with several different populations of students. Intangible token economy interventions can be used with general education or special education students.

This intervention can also be used with students in pre-school through college. The intangible token should be altered to be age appropriate for the participants, but this can be done easily. When replicating this study, it is recommended to consider allowing the student to give the token to him/herself instead of the teacher being the only one allowed to use Class DoJo. It is believed that allowing the students to reward themselves may provide stronger motivation to earn more tokens, by adding another element of reward and eliciting a deeper intrinsic response thus building self-regulation skills more quickly.

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Appendix A

Parent/Guardian Consent Form

I give permission for my child, _____, to be a participant in the research titled **The Effects of an Intangible Token Economy on Kindergarten Students with and without Disabilities** which is being conducted by Danielle Wheeler, who can be reached at 478-742-5959. I understand this participation is entirely voluntary; I can withdraw my consent at any time and have the results of the participation returned to me, removed from the research records, or destroyed.

The following points have been explained to me:

1. The purpose of this study is to determine if implementing an intangible token economy (Class DoJo) will decrease inappropriate behaviors and if the behavior changes can be maintained.
2. The procedures are as follows: My child will be asked to participate in an intangible token economy, specifically Class DoJo. My child will receive points for demonstrating specific appropriate behaviors. My child will be able to use his/her points to choose a second reinforcer at the end of each week. My child's name will not appear on the data sheet, therefore the information gathered will be completely anonymous/confidential. I will be asked to sign two of these consent forms. One form will be returned to the investigator and the other consent form will be kept for my record.
3. No physical, psychological, social or legal risks exist in this study.
4. The results of this participation will be confidential and will not be released in any individually identifiable form without my prior consent unless required by law.
5. The investigator will answer any further questions about the research (see above phone numbers).
6. In addition to the above, further information, including a full explanation of the purpose of this research, will be provided at the completion of the research, if you request it.

Please check one. Sign below.

☐ Agree ☐ Disagree

_____

Signature of Parent or Guardian Date
(If participant is less than 18 years of age)

_____

Signature of Investigator Date

****

*According to GC records retention policy, all research records pertaining to this research will be retained for a minimum of three years before they will be shredded or permanently deleted.

Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Tsu-Ming Chiang, GC IRB Chair, CBX 090, GC, email: irb@gcsu.edu; phone: (478) 445-0863.

Appendix B

Letter to accompany parental consent form

Department of Teacher Education
Special Education Program
Campus Box 72
Milledgeville, Georgia 31061-0490
Phone (478) 445-4577
Fax (478) 445-0692

Dear Parents:

I, Danielle Wheeler, am a graduate student at Georgia College, completing a Specialist degree. I am taking EDEX 7310, *Research Design*. Graduate students learn how to implement action research projects. They select a small target group of students or one student (single subject design research) to implement an evidence-based practice that is designed to improve a specific behavior or skill.

I would appreciate it if you would allow your student to use your child's information for this assignment. As part of the GC graduate training program, the college student will be required to keep all information confidential. All identifying information such as your child's name and school will be omitted. None of the information will be used to evaluate your child.

Furthermore, the assignment will not take your child out of class nor will it distract from your child's education. If you choose for your child not to participate, there will be no consequence. Choosing not to participate will in no way impact the services or support your child receives.

In the attached consent form, you will see the term "intangible token economy." This simply refers to a reward system in which your child will receive an intangible (in this case, a point) token. At the end of the week, the tokens can be traded in for a prize of the child's choice. The more tokens received, the more prizes there are to choose from. We will use Class DoJo to keep track of our points. It is an online website that assigns an avatar to each student. Points (tokens) are tallied next to each avatar.

If you have any questions or concerns about this assignment, please call me at Wells Elementary at 478-742-5959. I am also available upon your request to meet at school. *Please complete the attached form and return.* Thank you for considering this request.

Respectfully,

Danielle Wheeler

Appendix C

Signed Site Permission

Teresa A. McCuen
Principal

Neal A. Spence
Assistant Principal

Wells Elementary School
101 Mattie Wells Drive; Macon, GA 31217
Ph. (478) 742-5959 Fax (478) 742-5930

June 28, 2016

To whom it may concern:

After careful consideration, I give permission for Danielle Greene Wheeler to conduct research investigating the effects of an intangible token economy on the behavior of students with disabilities. Mrs. Wheeler may conduct her research at Wells Elementary School during the 2016-2017 academic school year. Mrs. Wheeler may include Wells Elementary students in her participant pool.

Teresa A. McCuen

Appendix D

Minor Assent Form

I, _____, agree to be a participant in the research title The Effects of an Intangible Token Economy on Kindergarten Students with Disabilities, which is being conducted by **Danielle Wheeler**, who can be reached at **478-742-5959**. I know I do not have to participate; I can stop at any time and have the results of the participation returned to me, removed from the research records, or destroyed.

The following points have been explained to me:

1. I will be asked to participate in an intangible token economy, specifically Class DoJo. I will receive points for showing specific appropriate behaviors. I will be allowed to use these points at the end of each week to buy a reward of my choice. My name will not be on the data sheet. I will be asked to sign two of these forms. I can keep one for myself, and the researcher will keep one.
2. If I become uncomfortable, I can stop at that time.
3. If I participate in this study, I am not putting myself in any danger.
4. My information will be kept secret, and no one will know that the answers or results are mine, unless I tell them.
5. If I have any questions about this, I can ask the researcher by calling the phone number above.
6. If I want to know more about the research, I can ask for more information after the research is finished.

_____

Signature of Investigator Date

_____

Signature of Minor Participant Date

****

Research at Georgia College involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Tsu-Ming Chiang, GC IRB Chair, CBX 090, GC, email: irb@gcsu.edu; phone: (478) 445-0863.