# Using technology for classroom management: The implementation of ClassDojo

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**Abstract:** Positive student behaviors are a necessity in order to provide students with an environment in which they can be successful and learn. Every classroom has students who may present negative behaviors; therefore, it is important to find classroom management strategies that are effective in reducing negative student behaviors and increasing positive student behaviors. In this study, ClassDojo, a digital behavior management tool, for both positive and negative student behaviors, was implemented in a first-grade classroom. Throughout the study, a behavioral checklist was used to tally the frequency of positive and negative behaviors. During the first week, students were rewarded with Gator Bucks, a school reward system wherein when students are respectful, responsible, and ready to learn, they can earn Bucks. Students can use their Gator Bucks to buy school supplies and/or toys. During the second week, ClassDojo was introduced to students and they received both Dojo points and Gator Bucks. During the third week, students only received Dojo points. There was no difference in positive behaviors between Gator Bucks and ClassDojo. Students' behaviors were equally as good when using ClassDojo only. There was a large decrease in negative behaviors when ClassDojo was implemented. It can be concluded that notifying students of their behaviors using Dojo points appeared to be just as effective as using Gator Bucks when it came to positive behaviors. However, ClassDojo was more effective at reducing the frequency of negative behaviors than Gator Bucks.

Teachers rely on positive student behaviors to create an environment in which students can be successful and learn. This is particularly the case in earlier grades when students are gaining a sense of how to be a good citizen and need structure to ensure a productive learning environment. As Bahceci (2019) noted, a primary goal of teaching is to promote behaviors that help students learn in the best way and become productive members of society. In the past few decades, educational technologies have increasingly been used to improve the efficiency and effectiveness of instruction (Delgado et al., 2015). However, as Cho et al. (2020) noted, "less research has addressed tools used by educators or by students to promote positive behavior" (p. 1). The goal of the present study is to examine the influence of ClassDojo, a digital behavior management tool, on both positive and negative student behaviors. Whereas some scholars have explored the effectiveness of ClassDojo, my review of the literature revealed no studies, to my knowledge, that examined the change in behaviors when Gator Bucks were present and when they were removed. Such research can provide teachers and school administrators with an objective way to assess whether ClassDojo should be implemented in their classrooms.

# Literature review

## Self-Regulation

The ability of students to self-regulate is essential to their functioning in school (McClelland & Cameron, 2011). Self-regulation refers to students' ability to monitor their own behaviors, assess those behaviors based on their own standards, and correct them when they do not align with their goals. The way children behave in their interactions with peers in school and in their play environments can be influenced by their self-regulation (Montroy et al., 2016). Children typically begin to develop self-regulation in their preschool years (Willis, 2016). According to Montroy and colleagues (2016), the development of self-regulatory skills has been associated with long-lasting social and academic benefits. Children typically have an easier time navigating social and learning environments when they are able to effectively and flexibly manage their thoughts, feelings, and actions (Blair & Diamond, 2008; McClelland et al., 2010).

Self-regulation is a broad construct. The behavioral aspects of self-regulation include the integration of flexible attention, working memory, and inhibitory control. All of these aspects provide a foundation for academic success between preschool (Blair & Razza, 2007) and adulthood (McClelland et al., 2011). Children who enter kindergarten without adequate self-regulatory skills are at greater risk of difficulty later in school, including peer rejection and low academic achievement. The lack of self-regulatory skills can cause children to have difficulty succeeding in school and making friends; however, possessing strong self-regulatory skills helps children feel good about themselves (Blair, 2002; McClelland et al., 2000). The ability for a student to self-regulate is, therefore, a crucial skill for academic success throughout school, as well as in the future.

## Classroom Management Technologies

An important aspect of a teacher's responsibility is effective behavior management, as it directly affects the prevalence of negative behavior exhibited by students within the classroom. Classroom management is the foundation of a safe and positive learning environment. Brophy (2006) defined classroom management as "actions taken to create and maintain a learning environment conducive to successful instruction (arranging the physical environment, establishing rules and procedures, maintaining students' attention to lessons and engagement in activities)" (p. 17). A well-managed classroom greatly enhances students' academic success. Classrooms that are well-managed are structured environments in which students are focused and on-task.

Technological advancements have allowed teachers to implement new, innovative tools to their classroom management repertoire. Over time, more and more technology has found its way into classrooms (Schussler et al., 2007). The implementation of technology in classrooms has had a substantial impact on alleviating the pressure placed on teachers' classroom management skills such as establishing rules and procedures to promote cooperative learning (Korpershoek et al., 2016). Online software has increasingly been adopted by teachers as classroom management tools. One such classroom management software application, used by 95% of all K-8 schools in the U.S. and 180 countries, is ClassDojo (ClassDojo, 2017). ClassDojo is a secure and free application that can be accessed through computers and mobile devices and it can serve many different purposes in a

classroom. ClassDojo allows teachers to reward points for chosen positive behaviors and subject points for chosen negative behaviors. Each student is provided with a username and password, which allows parents to access their child's behavioral data. This application can also be used as a communication platform for teachers and parents to communicate. Teachers can customize the program with badges, avatars, and behavioral characteristics specific to their class and students. ClassDojo allows the students to become aware of their behaviors in class and understand what is expected of them, and as such can be useful in helping students self-regulate their behaviors.

## Token Economies for Classroom Management

When teachers reward positive behaviors, they do so anticipating that the behavior will be repeated. One approach to behavior reinforcement is the use of token economies. A token economy is a classroom management strategy in which students are rewarded tokens for displaying appropriate behaviors (Robacker et al., 2016). When using the principle of positive reinforcement, each time a student demonstrates a target behavior they receive a token that can later be traded for a backup reinforcer; something of value to the student. In order to be considered positive reinforcers, tokens and backup reinforcers must increase targeted behaviors. Therefore, it is important that a teacher thoughtfully selects backup reinforcers that students will want to later exchange their tokens for (Robacker, 2016). Research has shown the benefits provided through the use of token economy interventions as an effective way of decreasing disruptive or inappropriate behaviors (Filcheck et al., 2004; Klimas & McLaughlin, 2007) while increasing desired behaviors.

## Using ClassDojo for Classroom Management

Few scholars have explored the effectiveness of ClassDojo as a behavior management tool. However, researchers have generally found ClassDojo to be an effective classroom management tool, leading to decreases in negative behaviors and increases in positive behaviors in both individual and group contexts (Kirkpatrick et al., 2020; Charles, 2019; 2019; Manolev, 2019; Lynne et al., 2017). In a study of twelve to thirteen-year-olds, Mora (2020) found that the most common negative behavior was talking during classwork and the least common negative behavior was being disrespectful to the teacher. The most common positive behaviors were being quiet while the teacher was explaining and correcting and the least common positive behavior was being disrespectful to their peers (Mora, 2020).

Additionally, ClassDojo can improve students' motivation due to the students being able to monitor their behavior patterns and receiving immediate feedback and praise for their behaviors (Benhadj et al., 2019; Hammonds et al., 2013). ClassDojo can help students redirect their behaviors in order to be successful while working in centers and teacher-directed guided reading lessons (Chiarelli et al., 2015). Students have reported enjoying and seeing ClassDojo as a catalyst for positive attention and focus in the classroom (Benhadj et al., 2019). According to Benhadj and colleagues (2019), students described feeling happy when they earned Dojo points. ClassDojo influenced their behaviors in a manner that was not controlling and was thus supportive of their autonomy. For example, the use of ClassDojo increased their participation in class, yet provided them with the opportunity to choose their desired way of doing so (Benhadj et al., 2019). According to

Bahceci (2019), ClassDojo increased the frequency of families' concerns about the courses of the students. Since the parents have access to the students' behavioral data through ClassDojo, the problems can be solved more quickly and positive behaviors can be rewarded at home.

## Present Study

The goal of the present investigation was to examine the effectiveness of ClassDojo as a classroom management technique. I examined the changes in students' behaviors both when Gator Bucks were present and when they were removed to isolate the effect of ClassDojo. The following research questions were considered:

1. What influence, if any, does ClassDojo have on positive student behaviors?
2. What influence, if any, does ClassDojo have on negative student behaviors?
3. To what extent do student behaviors change after the removal of Gator Bucks?

## Methods

This study was conducted with first-grade students at an elementary school in Southern Maryland. The class consisted of 18 students between the age of 6 and 7 years old; 18 of the students participated in the study. Ten of the students were girls and eight were boys. Four of the students had Individualized Educational Plans.

The school in which the study was conducted implements Positive Behavior Interventions and Supports (PBIS), a set of ideas and tools that schools use to improve the behavior of students. The PBIS implemented at the school is a reward system called Gator Bucks. When the students were responsible, respectful, or ready to learn, they earned a Gator Buck. At the end of each marking period, the students had the opportunity to spend their earned Gator Bucks at the school store. During the first week of data collection, students were solely rewarded with Gator Bucks, since that is the PBIS that has been in place since the beginning of the year.

At the start of the second week of data collection, I introduced the platform ClassDojo to the students. During this week, students received both Gator Bucks and Dojo Points. During the final week of data collection, students were not rewarded with Gator Bucks and were solely rewarded with Dojo points on ClassDojo. The online platform stores the information in many different charts. The information is stored and organized by the day, class, and student. This information remains stored until the teacher deletes it. The students and parents received login information to access the students' behavioral information. I used this platform to record both positive and negative behaviors in the classroom. At the end of each week, I observed and took notes on the occurrence of behaviors. The list of ClassDojo and behavioral checklist behaviors was created in consultation with my mentor (see Appendix A). These behaviors were also identified in prior educational research. The students were observed for both positive and negative behaviors on the behavioral checklist. The positive behaviors included raising hands to speak, looking at the teacher or peer when they are talking, and actively working. The negative behaviors included calling out, making distracting noises, talking while a peer or teacher is talking, not looking at a peer or teacher while they are talking, and not actively working. While being observed, quantitative data was collected by noting the number of

times each behavior was observed for each student. The behaviors on ClassDojo that were observed include respect, focus, and engagement.

### Data Collection

Data was collected on the positive and negative behavior trends over the course of the use of Gator Bucks and ClassDojo. Before introducing ClassDojo, my mentor observed the individual student's behaviors during instruction. Students were observed in 30-second increments. My mentor recorded the frequency of each behavior for each student on the behavioral checklist. The behaviors on the checklist and ClassDojo were determined based on my prior observations. The observer only recorded quantitative information for these behaviors; no qualitative data was recorded. Data was collected for a total of three weeks. Week 1: Gator Bucks only; Week 2: Gator Bucks and ClassDojo; and Week 3: ClassDojo only. Over the course of the three weeks, the observers repeated the process.

## Data sources

Table 1:
*Research Questions and Data Sources*

| | **Pre-Post Behavior Checklist** | **Tracked Behaviors in ClassDojo** |
|---|---|---|
| What influence, if any, does ClassDojo have on positive student behaviors? | **Observer collected data will be analyzed for changes between pre- and post-ClassDojo observations.** | **ClassDojo records will be analyzed for changes in behaviors over time.** |
| What influence, if any, does ClassDojo have on negative student behaviors? | **Observer collected data will be analyzed for changes between pre- and post-ClassDojo observations.** | **ClassDojo records will be analyzed for changes in behaviors over time.** |
| To what extent do student behaviors change after the removal of Gator Bucks? | **Observer collected data will be analyzed for changes between the time Gator Bucks were implemented and when they were removed.** | **ClassDojo records will be analyzed for changes in behaviors between the time Gator Bucks were implemented and when they were removed.** |

### Data Analysis

The quantitative data from the behavior checklists was analyzed after each week. The behaviors were tallied for the first, second, and third set of observations for both positive and negative behaviors. Paired samples *t*-tests were run for positive and negative behaviors and each of the three separate data collection time frames. This allowed me to compare the average frequency of each behavior from week to week, thus helping me to analyze and compare the effectiveness of each condition (e.g., Gator Bucks only, Gator Bucks and ClassDojo, and ClassDojo only).

### Validity Concerns

In order to attend to validity, my mentor teacher observed student behavior and documented the data. To mitigate my own biases, I discussed my findings with my mentor. The data is based on observations, which eliminates the typical concerns associated with self-report. Because my mentor teacher collected student data without using identifiers, there is no way for my biases associated with particular students to influence my analyses. Each student in the class will be assigned a number. They were identified and referred to by their number to protect confidentiality.

## Results

In order to guide the investigation of the effectiveness of ClassDojo, I aimed to explore three research questions:

1. What influence, if any, does ClassDojo have on positive student behaviors?
2. What influence, if any, does ClassDojo have on negative student behaviors?
3. To what extent do student behaviors change after the removal of Gator Bucks?

In order to answer these research questions, the frequency of behaviors was recorded on a checklist. Quantitative data was obtained in order to explore the effectiveness of ClassDojo on reducing both positive and negative behaviors to examine the effects after the removal of Gator Bucks. T-tests were performed to determine the statistical significance of changes in behaviors that occurred during the duration of the study. The predetermined threshold was p=.05. In the following section, the results of the quantitative analyses will be reported and conclusions will be drawn.

### What influence, if any, does ClassDojo have on positive student behaviors?

Quantitative results regarding the changes in positive behaviors are in Table 2 through Table 4. There was no significant difference in the frequency of positive behaviors in any of the conditions. There was an increase in the frequency of positive behaviors from Gator Bucks only ($M$= 8.52, $SD$= 2.82) to ClassDojo and Gator Bucks ($M$=9.47, $SD$=2.21) and these changes were associated with a small to medium effect size ($d$ = 0.38); however, they were not significant. There was an increase in the frequency of positive behaviors from ClassDojo and Gator Bucks ($M$=9.47, $SD$=2.21) to ClassDojo only ($M$=9.49, $SD$=1.19) and these changes were associated with a very small effect size ($d$ = 0.01); however, they were not significant. There was an increase in the frequency of positive behaviors from ClassDojo only ($M$=9.49, $SD$=1.19) to Gator Bucks only ($M$= 8.52, $SD$= 2.82), and these changes were associated with a small to medium effect size ($d$ = 0.45); however, they were not significant.

Overall, ClassDojo did not have an effect on positive student behaviors. Even though there was an increase, it was not significant. Positive student behaviors did not increase nor decrease. ClassDojo is not effective in increasing positive student behaviors. Students' behaviors were as good when only using ClassDojo rather than only using Gator Bucks or ClassDojo and Gator Bucks.

Table 2:

*Gator Bucks to ClassDojo and Gator Bucks Positive Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **Gator Bucks Only** | **8.52** | **2.82** | **0.12** | **0.38** | **1.37** |
| **ClassDojo and Gator Bucks** | **9.47** | **2.21** | | | |

Table 3:

*ClassDojo and Gator Bucks to ClassDojo only Positive Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo and Gator Bucks** | **9.47** | **2.21** | **0.97** | **0.01** | **4.11** |
| **ClassDojo Only** | **9.49** | **1.19** | | | |

Table 4:

*ClassDojo only to Gator Bucks only Positive Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo Only** | **9.49** | **1.19** | **0.12** | **0.45** | **1.36** |
| **Gator Bucks Only** | **8.52** | **2.82** | | | |

What influence, if any, does ClassDojo have on negative student behaviors?

Quantitative results regarding the changes in negative behaviors are in Table 5 through Table 7. There was a significant difference in the frequency of negative behaviors. There was a decrease in the frequency of negative behaviors from ClassDojo and Gator Bucks ($M$=6.05, $SD$=3.23) to ClassDojo only ($M$=1.37, $SD$=1.14) and these changes were associated with a large effect size ($d$ = 0.94). There was a decrease in the frequency of negative behaviors from ClassDojo only ($M$=1.37, $SD$=1.14) to Gator Bucks only ($M$= 6.05, $SD$=3.23) and these changes were associated with a large effect size ($d$ = 1.28). However,

there was not a significant decrease in the frequency of negative behaviors from Gator Bucks only (*M*= 6.05, *SD*= 3.23) to ClassDojo and Gator Bucks (*M*=5.13, *SD*=4.10) and these changes were associated with a small effect size (*d* = 0.24).

Overall, ClassDojo was effective in decreasing the frequency of negative student behaviors. Negative behaviors continued to decrease the longer ClassDojo was used in the classroom. Students responded to ClassDojo as a classroom management technique as their negative behaviors decreased in the classroom.

Table 5:

*Gator Bucks to ClassDojo and Gator Bucks Negative Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **Gator Bucks Only** | **6.05** | **3.23** | **0.11** | **0.25** | **1.27** |
| **ClassDojo and Gator Bucks** | **5.13** | **4.01** | | | |

Table 6:

*ClassDojo and Gator Bucks to ClassDojo only Negative Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo and Gator Bucks** | **5.13** | **4.01** | **.000** | **0.94** | **490.34** |
| **ClassDojo Only** | **1.37** | **1.14** | | | |

Table 7:

*ClassDojo only to Gator Bucks only Negative Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo Only** | **1.37** | **1.14** | **0.000** | **1.28** | **42644.42** |
| **Gator Bucks Only** | **6.05** | **2.23** | | | |

### To what extent do student behaviors change after the removal of Gator Bucks?

Quantitative results regarding the changes in behaviors after the removal of Gator Bucks are shown in Table 8 and Table 9. After the removal of Gator Bucks, negative behaviors continued to decrease. There was a significant decrease in negative behaviors after the removal of Gator Bucks: before Gator Bucks were removed ($M$=5.13, $SD$=4.01) to when Gator Bucks were removed ($M$=1.37, $SD$=1.14). These changes were associated with a very large effect size ($d$ = 0.94). There was no significance in changes in positive behaviors after the removal of Gator Bucks: after Gator Bucks were removed ($M$=9.47, $SD$=2.21) to when Gator Bucks were removed ($M$=9.49, $SD$=1.19). These changes were associated with a very small effect size ($d$ = 0.01). Therefore, after Gator Bucks were removed, the frequency of negative behaviors continued to decrease, but positive behaviors remained the same.

Overall, student behaviors remained the same, or even continued to decrease when only ClassDojo was implemented. After ClassDojo was introduced and implemented with Gator Bucks, there was only a slight decrease in negative behaviors, however, after Gator Bucks were removed there was a large decrease in negative behaviors. Notifying students of their behaviors using Dojo points appeared to be just as effective as using Gator Bucks to promote positive behaviors. However, negative student behaviors continued to decrease after the removal of Gator Bucks.

Table 8:

*Removal of Gator Bucks Negative Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo and Gator Bucks** | **5.13** | **4.01** | **.000** | **0.94** | **490.34** |
| **ClassDojo** | **1.37** | **1.14** | | | |

Table 9:

*Removal of Gator Bucks Positive Behaviors*

| | Mean | SD | Significance (p) | Effect Size (d) | Bayes Factor |
|---|---|---|---|---|---|
| **ClassDojo and Gator Bucks** | **9.47** | **2.21** | **0.97** | **0.01** | **4.11** |
| **ClassDojo Only** | **9.49** | **1.19** | | | |

## Discussion of Results

Although the *p*-values associated with the changes in positive student behaviors were non-significant, some things in negative behaviors were significant. The first is that, in most cases, negative student behaviors decreased with the implementation of ClassDojo. Second, after the removal of Gator Bucks, negative behaviors continued to decrease and positive behaviors remained the same. With the small sample size ($N$=18), it is difficult to find statistically significant results. Although the lack of significant findings on positive behaviors prevents any conclusive generalizations, this study provides more evidence for the effectiveness of ClassDojo, than against it. That is, there is some evidence that ClassDojo is effective in improving student behaviors in the classroom. Moreover, it can confidently be stated that the implementation did not have a negative impact on students' behavior. Part of the results fall in line with the past research and what had been established above in the literature review, however, other parts contradict past research.

Throughout the duration of the study, students were observed for the frequency of both positive and negative behaviors. I noticed that students seemed very excited when they heard the "ding" indicating that someone earned a Dojo point, but they were not able to see which peer earned it. Students seemed to be more motivated to earn Dojo points than Gator Bucks. Students were able to self-regulate, monitor their own behaviors, in order to earn these Dojo points. Research has shown the benefits provided through the use of token economy interventions as an effective way of decreasing disruptive or inappropriate behaviors (Filcheck et al., 2004; Klimas & McLaughlin, 2007) while increasing desired behaviors. Researchers have generally found ClassDojo to be an effective classroom management tool, leading to decreases in negative behaviors and increases in positive behaviors in both individual and group contexts (Kirkpatrick et al., 2020; Charles, 2019; 2019; Manolev, 2019; Lynne et al., 2017). This study supports past research that ClassDojo is effective at decreasing negative behaviors, however, the results of my study contradict past research as my results did not indicate an increase in positive behaviors.

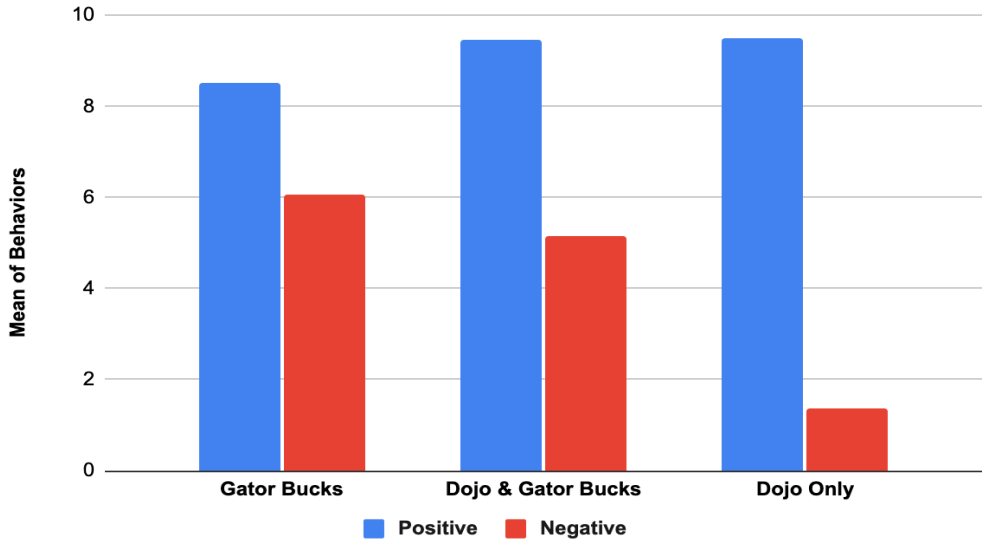


Figure 1. *Means of Behaviors.*

# Conclusions and Implications

A primary goal of teaching is to promote behaviors that help students learn in the best way and become productive members of society (Bahceci, 2019). However, there are always going to be behaviors in a classroom that do not allow that; therefore, it is the teachers' job to find a strategy to promote these helpful behaviors. Through the implementation of ClassDojo, students were rewarded with Dojo points when positive behaviors were observed. Through this process, the frequency of negative behaviors decreased, however, the frequency of positive behaviors was not affected. After the removal of Gator Bucks, negative student behaviors continued to decrease. It can be concluded that Class Dojo is more effective at reducing negative student behaviors than Gator Bucks.

## Limitations

One of the major limitations of this study was a small sample size, however, there were other limitations that impacted the study. One limitation that hindered my study was the global pandemic. To prioritize the health and safety of all staff and students, masks were required in buildings, therefore, making it difficult to observe some of the behaviors due to not being able to see students' full faces. This is the first year many of these students have attended school in over a year due to COVID-19; therefore, behaviors are different as they are not accustomed to being in-person for learning. The implementation of ClassDojo only lasted two weeks, so timing was extremely limited. One week ClassDojo was implemented with Gator Bucks, and the second week, ClassDojo was implemented by itself. If ClassDojo was implemented longer, students may have been less motivated to earn Dojo points. Many of these students have been earning Gator Bucks since they started school at the location, some for a couple of years. It would be beneficial to use ClassDojo for both positive and negative behaviors.

## Implications

Although this research had a small sample size, it can be implied that ClassDojo decreases negative student behaviors. While the students in this study did not show significant changes in their positive behaviors, they continually showed significant changes in their negative behaviors. In the future, teachers and educators could use ClassDojo as a classroom management technique. If teachers continue to use ClassDojo throughout the school year, students may have an increase in positive behaviors, and continue to have a decrease in negative behaviors. For my future classroom, I plan to use ClassDojo as a classroom management strategy. In conclusion, students and teachers are both able to benefit from using ClassDojo in the classroom.

The results of this study are beneficial to the existing bodies of research that focus on classroom management techniques by implementing Gator Bucks and ClassDojo both separately and together. There is a heavy focus of research on classroom management techniques, yet there has been very little research conducted on ClassDojo in particular. Additionally, my study focused on the changes in behaviors once Gator Bucks was removed. Future researchers would be able to use my study to find new effective classroom management techniques for teachers to implement in their classrooms.

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# Appendix A

## Behavior Checklist

Please tally how many times each of these behaviors were observed for each student:

| Student Number | Observed Behaviors | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Positive Behaviors | | | Negative Behaviors | | | | |
| | # of times student raised hand to speak | # of times student looks at teacher or peer who is talking | # of times student is actively working | # of times student calls out | # of times student makes distracting noises | # of times student talks while the teacher or peer is talking | # of times student is not looking at teacher or peer who is talking | # of times student is not actively working |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 17 | | | | | | | | |
| 18 | | | | | | | | |