Class DoJo: Supporting the art of student self-regulation

Abigail O. MacLean-Blevins
St. Mary's College of Maryland

Abstract: Students in elementary classrooms are often inconsistently rewarded for specific positive behaviors; yet, research indicates that children must develop positive and self-monitoring behaviors to become successful students. In consideration of this context, this study examined the effects on student conduct of tracking their positive self-monitoring behaviors using an online behavior tracking system, Class DoJo. The study also considered students' affective response to use of the online system. Students had autonomous access to their behavior log via individual usernames and passwords. Over the three weeks of Class DoJo implementation, positive, self-regulatory behaviors increased and negative, disruptive behaviors decreased even though only the frequency of positive behaviors were tracked using Class DoJo. The majority of students responded positively about the online system.

Introduction

Students in elementary school are often subject to behavior management systems under which they are penalized for specific undesirable behaviors, while desirable behaviors are unfortunately ignored. Among the desirable behaviors such reward systems often fail to reinforce are self-monitoring behaviors, such as staying on-task, seeking assistance where necessary, and reviewing work, which students normally need to develop to become successful learners. To create a behavior management system that acknowledges students' self-monitoring behaviors, I introduced into my classroom Class DoJo, a free online behavior tracking system. Within the system, the teacher can input specific positive and/or negative behaviors that will be tracked. As individual students exhibit specific behaviors, the teacher tallies those behaviors. Each student has a unique username and password; with these credentials, students and their parents can access the log of that student's behaviors. The teacher has the authority to see all individual student scores as well as whole-class records. Through this system, teachers can identify specific desirable behaviors and commend students for the exhibition of those behaviors consistently as well as record and track less desirable behaviors. In my research, I only used the positive behavior option in the system because the involved students already were using and familiar with a behavior management system that identified classroom-specific undesirable behaviors.

Prior to beginning my research, I believed students would respond eagerly to the computer-based system because of its novelty and aesthetic allure. From my initial observations of the class, my students were well-behaved for the most part, and were often but inconsistently rewarded for exhibiting positive behavior. I believed the pairing of the internet-based Class

DoJo plus the use of the system to track positive classroom behaviors would engage students and I believed the individualized and autonomous access to daily behavior scores would help students monitor their own behavior and create their own behavior goals.

Theoretical framework

An important aspect of a child's education is the development of self-regulation skills; such abilities will transcend the educational experience to become life skills (Zimmerman, 2002). McClelland and Cameron (2011) identified self-regulation as "a key construct in children's healthy and adaptive development" (p. 29). Zimmerman (1996) linked students' use of self-regulatory skills, including using specific strategies and setting goals, to students' success and positive self-motivation. To understand self-regulation, Zimmerman (2002) explained, one must first understand self-regulation as the process of transforming mental abilities to academic skills rather than a singular mental ability or academic skill. One must also understand learning to be an activity consciously undertaken by students; students initially interact with self-regulation skills through modeling and imitation, but then internalize and apply self-regulation processes in their own thoughts and behavior (Zimmerman, 1996). Furthermore, Zimmerman (2002) postulated that a self-regulated student may self-motivate to different levels when engaged in different tasks; Zimmerman identified that learner's perceived efficacy and personal interest in the topic as important factors in self-motivation, a key aspect in self-regulation. Self-regulation skills can be viewed as processes that can be taught to and encouraged in students but ultimately must be actively developed and used by the individual.

Researchers describe self-regulation by enumerating the subprocesses and components that are necessary for successful self-regulatory behaviors. McClelland and Cameron (2011) identified flexible attention, working memory, and inhibitory control as the most important subprocesses for self-regulation in young children. Without those essential subprocesses, McClelland et al. explained, young children cannot develop or maintain self-monitoring behaviors. Zimmerman (2002) described self-regulation as the continuous cycle between the forethought phase, the performance phase, and the self-reflection phase. In the forethought phase, students engage in task analysis behaviors; next, students move into the performance phase, during which students exercise self-control. Then students move into the self-reflection phase, which consists of self-judging behaviors. Using the thoughts gathered in the self-reflection phase, self-regulated students adjust their approach as they again enter the forethought phase (Zimmerman, 1996; Zimmerman, 2002). Students continuously circulate through this cycle for all required tasks and activities; a self-regulated student adapts through each cycle.

Students who successfully develop self-regulation processes are more likely to be motivated in school, academically successful, and optimistic about their futures. Self-regulated learners are typically proactive about their own education and are intrinsically motivated to succeed in school. Such learners often are able to more easily adjust to new situations and demands (Zimmerman, 1996; Zimmerman, 2002). Not all students successfully develop the self-regulatory behaviors that lead to successful adaptations. Students who experience difficulties in any aspect of the self-regulation cycle, such as ineffectual goal setting, erroneous self-monitoring, and low self-efficacy views, might become frustrated with education and lose their intrinsic motivation to learn. For these students, Zimmerman (1996) explained, specific self-regulation skill interventions can be

successful. In such interventions, students focus on developing strategic skills, including goal setting and self-monitoring. Many directors of schools and education programs expect that students will develop the necessary learning skills to become self-regulated learners without ever directly addressing those skills in an educational setting (Zimmerman, 1996; Zimmerman, 2002). Some students will not require such explicit elucidation of skills and processes, but other students will fail to develop successful adaptive self-regulatory processes without such explicit exposition.

Literature Review

Behaviorism

B. F. Skinner (1987) hypothesized that student behavior can be understood through the motivations, reinforcers, and punishments imposed upon students by teachers. Student motivation, Skinner theorized, can be manipulated by teachers through systems of reinforcements and punishments to increase student engagement and learning. In the classroom, teachers must contrive short-term reinforcers to encourage or discourage learning behaviors; most possible natural reinforcers for learning behaviors are too distant to be motivating for students. Educators often apply Skinner's theory in an extrinsic reward system in which teachers essentially bribe students to exhibit desired behaviors or cease undesirable behaviors. Educators and educational researchers continue to debate the effectiveness and long-term implications of Skinner-based reward systems.

Chance (1993) defended the use of an external reward system as an effective teaching and classroom management strategy. He claimed that a reward system based on Skinner's theories of reinforcement is ultimately effective for getting students to learn. He argued that rewards can be used to strengthen student persistence and gradually demand more from students over time. He did acknowledge, however, that rewards must be used with care.

Other researchers have warned that a behaviorist reward system may have detrimental effects. Mader (2009) stated that students may become demotivated by external rewards because students then focus on short-term performance goals, fail to make long-term learning goals, and lose their internal motivation to learn. Kohn (1993) claimed that students lose their sense of autonomy and self-determination, and therefore their interest in learning and the topic, when regulated by a system of rewards. Students will more likely remain interested in a task and persist in learning when not motivated by external rewards. Kohn stated, "[t]he fact is that extrinsic motivators do not alter the attitudes that underlie our behaviors" (p. 784). Freiberg & Lamb (2009) argued that the behaviorist approach has failed to facilitate student self-direction and self-discipline. Educational psychologists continue to debate over the possible implications, effectiveness, and effects of a behaviorist-based reward system in a classroom.

Teacher as Classroom Manager

Researchers studying different key aspects of the approach to classroom management have identified what might be thought of as general "best practice" trends. One of the key aspects of a teacher as classroom manager is a teacher's ratio of demanding statements to nurturing behaviors. In an extension on Baumrind's 1973 work, Walker (2009) concluded that an authoritative teacher, who demanded student self-management

and high quality work in addition to providing nurturing to her students, achieved the desirable combination of student engagement and student academic success. In the same study, the students in the classroom of the "authoritarian" teacher, who demanded high quality work but rarely exhibited nurturing behavior, achieved high academic success but low self-motivation. Students in the classroom of the "permissive" teacher, who consistently provided nurturing but few demands for student work, were highly engaged but achieved limited academic improvement. From this study, Walker concluded that a balance of nurture and high demand from teachers is the most effective teaching style to both engage and teach students.

The establishment of the classroom as a safe, cooperative environment is another major consideration in the creation of a classroom management system. Grubaugh and Houston (1990) argued that the best-managed classrooms often are governed by a set of rules that both the teacher and the students have agreed are fair, desirable, and workable. Norris (2003) explained that the classroom is a site of social and emotional as well as academic learning, and advocated that the agreed-upon class rules should provide protection and support for students as they develop social skills and emotionally mature. A classroom culture that emphasizes respect for peers promotes positive interactions and provides students with the opportunity to self-regulate negative behaviors before the teacher has to take disciplinary actions.

In addition to making a classroom a socially and emotionally safe and cooperative environment, the creation and ratification of class rules agreed upon by both the teacher and the students begins to address the need for cultural responsiveness. The cooperative creation of class rules provides a sense of ownership and belonging in the classroom, which is critical to student well-being and student development (Weinstein, Curran, & Tomlinson-Clark, 2003). A culturally responsive classroom management approach takes into account individual students, class dynamics, school environment, and the community context. Weinstein et al. (2003) explained that the purpose of culturally responsive classroom management is to create a space where all students can learn, not to control behavior. It is this vision which guides the present study.

Classroom Management

Though each educator's approach to classroom management is ultimately individual, based on his or her training, experiences, and beliefs, educational researchers have identified generalizable trends in classroom management systems and philosophy. Self-Brown & Matthews (2003) compared student goal-setting in three classrooms with three different classroom management systems. The authors concluded that students in the contingency-contract controlled classroom set more goals than students in a token-economy classroom or a classroom without a specific classroom management system. The authors attributed this disparity in goal-setting to the opportunity that a contingency contract model offers for students to be more autonomous and express more individuality. Self-Brown & Matthews (2003) found that students in the contingency contract style classroom set more learning goals and students in the token economy classroom set more performance goals.

In a person-centered classroom management situation, students and teachers share the responsibility of establishing the climate of the classroom and creating peer and student-teacher connections and relationships (Doyle, 2009; Freiberg & Lamb, 2009). In

such an environment, members should naturally demonstrate a high level of respect for individuals. The foundation of respect in a classroom then leads to effective and engaging collaborative work and learning (Doyle, 2009). Person-centered classroom management is complemented by participation-centered classroom management, which relies on the interaction of engagement, curriculum, relationships, development, and discipline. Each student has a responsibility to participate and actively make connections between these five aspects, and the teacher has the responsibility to provide opportunities for authentic and meaningful participation. Hickey & Schafer (2006) explained that as students focus on participation, behavior issues will diminish in frequency because students focus their energy and attention to participating. Actively participating students tend to be less frequently bored or overwhelmed, and therefore less likely to misbehave.

Technology in the Classroom

Educational researchers continue to stress the importance, relevance, and pervasiveness of technology in the lives of current students (Bolick & Cooper, 2006; Kimmel & Deek, 1996; Shields & Behrman, 2000; Solomon & Schrum, 2010). Through the development and widespread implementation of Web 2.0 and related technologies, students have been increasingly exposed to technology as both a source of information and a seemingly necessary communication network (Solomon et al., 2010; Alexander 2008). Alexander (2008) goes so far as to claim that students "live Web 2.0 digital lives" (p. 151). Teachers, he explained, can take advantage of the plethora of teaching tools available in Web 2.0 to tap into students' knowledge of, experience with, and interest in these technologies. In the classroom, teacher use of various technologies as learning resources almost necessitates a shift from teacher-centered to constructivist pedagogy because of the nature and intended usage of these technologies (Bolick & Copper, 2006).

Bolick et al. (2006) identified technology as a tool for student learning and for teacher organization. Students confined to a classroom can access pictures, videos, information, and primary sources from around the world via the internet. Through such access to multisensory information about the world, students can better understand the world around them (Alexander, 2008). Using technology as a tool for learning is in and of itself an important lesson for students; the successful adults of the future will need knowledge of and the ability to use a wide variety of technology (Bolick et al., 2006). Teachers, as adults in today's world, have access to great organizational and administrative technological tools. In particular, Web 2.0 and other communicative technologies open new avenues through which parents and teachers might communicate and collaborate (Shields & Behrman, 2000). By interacting and providing mutual support, parents and teachers can help students have a consistent educational experience over the course of several grade levels; such consistency can contribute to a student's development of self-regulating behaviors (Walker & Hoover-Dempsey, 2006).

Solomon and Schrum (2010) describe the myriad technologies available for use in the classroom and note that these technologies, even though widely available at little to no cost, are not being used by the majority of teachers. Web 2.0 and other technologies that were designed specifically for use in the classroom are much more than simply a digital version of a tool that existed before the advent of technology in the classroom; the connection these have with the internet and other sources of information are an integral part of the intention of the technology, and should be used as such for maximum

effectiveness as learning or teacher tools (Kimmel & Deek, 1996). There is a world of technology available to educators to use as sources of information, organizational tools, and, as is the case for the Class DoJo, for classroom management and facilitation of student engagement.

Research Questions

That questions that guided my research are as follows:

1. How will Class DoJo, which will be used only to commend students for exhibiting self-monitoring behaviors, influence student behavior?
2. Do students enjoy using Class DoJo?

Method

This study was conducted with third grade students at Hollywood Elementary School. The class consisted of 24 students ranging in age from 8 to 10 years old; 23 of the students participated in the study. Of the 23 participants, 12 were female students and 11 were male students. The parents of ten of the students have reported to the teacher that their child has been diagnosed by an outside professional with Attention Deficit Hyperactivity Disorder (ADHD), and those ten students are being medicated in accordance with doctor recommendations.

I introduced to our classroom Class DoJo, an online system that allows teachers to record the frequency of student behavior in teacher-generated categories over the course of a day or a class. The information is stored and can be compiled by the online program into various charts and representations. The site retains information, organized by day, class, and student, until the teacher chooses to delete information. Students and their parent(s) received a username and password which connected them to the child's individual behavior record. The system also has an option through which the teacher can send behavior reports to parents detailing a child's behavior for a single class, a day, a week, or a longer period of time.

I used this system only to record positive behaviors that I wished to reinforce. The Class DoJo was used during independent literacy work portion of each school day. I was the only person who assigned behavior commendations in the interest of consistency. I used Class DoJo only during independent work time to maximize students' opportunities to engage in self-regulatory behaviors and to reduce disruptions to instruction. On a weekly basis, I took a few minutes to project the class's behavior record for the week and enter into a discussion about the results. I provided students with at least one chance per week to access their behavior record at school. I helped students track their individual behaviors in a line graph each week. I prefaced the implementation of Class DoJo with a discussion in which we collaboratively decided what good learning behaviors are, and therefore what behavior categories would be included as possible behavior commendations in Class DoJo. I created my list of Class DoJo behavior commendations from a combination of self-monitoring behaviors identified in educational research, suggestions from my mentor, and the ideas generated by my students. These behaviors included working quietly, focusing on work, using classroom resources, double checking work, asking questions, and carefully reading directions.

Data Collection

As part of my research, I collected data on students' affective response to the Class DoJo system, the behavior trends over the course of use of the Class DoJo system, including the prevalence of self-monitoring behaviors and the frequency of disruptive behaviors, and the academic development of students over the course of the study. Before introducing the Class DoJo system to the students, I arranged for another intern and my mentor to observe student behaviors during instruction. Each of these viewers observed the independent work section of the language arts block before I implemented Class DoJo and each viewer observed on a different day. Data from these observations was recorded in a behavior frequency checklist (which is included in Appendix 1). The behaviors listed on this checklist include behaviors identified for commendation in Class DoJo and class-specific behaviors drawn from my initial observations of behavior patterns. The observers looked only for the frequency of the behaviors across the entire class, and did not record qualitative information about the behaviors (e.g., the students that exhibit the behaviors, the result of the behaviors). After the implementation and use of Class DoJo over four weeks, the observers returned and repeated the observation process.

As part of my study, I gathered student grades before and during the implementation of Class DoJo. To collect data on the students' opinion of Class DoJo, I asked students complete a three-question open-ended questionnaire (which is included in Appendix 2). Students were assured of the anonymity of their responses. The questionnaire was administered, completed, and collected after I completed my internship in the classroom so students felt less pressured to respond with what they think I want. To reduce possible bias on my part, I asked a third party to transcribe each student's questionnaire into a word processed document without names or identify information.

Table 1 provides a summary of my data collection methods organized by research question.

Table 1: Research questions and data sources

	Pre- Post- Behavior Checklist	Tracked Behaviors in Class DoJo	Student Free Responses
How will Class DoJo influence student behavior?	Observer-collected data were analyzed for changes and trends between pre- and post-Class DoJo observations.	Individual Class DoJo records were analyzed for changes and trends over time.	
Do students enjoy using Class DoJo?			Student responses were coded for recurring sentiments and key words.

Data Analysis

The behavior checklists were analyzed in a variety of ways. First, the overall number of desirable behaviors during the first set of observations was tallied and the two totals from the two observers were averaged. The same was done for the undesirable

behaviors from the first observation, the desirable behaviors from the second observation, and the undesirable behaviors from the second observation. General trends in students' responses and the prevalence of those responses were identified in qualitative coding.

Findings and interpretations

In the introduction to this paper, I outlined the situation in which students are routinely punished for specific misbehaviors, but rarely praised for specific desirable behaviors; rather, students are generally rewarded for their lack of misbehavior. I found this situation to be present most of the classrooms in which I had the opportunity to observe, including my placement classroom. Though I would not consider this situation a "problem" because the students in these classrooms generally function and learn to the degree expected, I wanted to see if drawing attention to and commending students for demonstrating specific positive learning behaviors would increase the frequency of those behaviors. I selected an online behavior tracking system which allowed me to identify specific positive behaviors and allowed students and parents to independently access a student's record of behaviors. Following is the presentation, analysis, and interpretation of the quantitative and qualitative data I collected to explore my research questions.

Influence of Class DoJo on student behavior

The first instrument I used to measure the frequency of student behavior was a pre- and post-Class DoJo behavior checklist, which included both positive and negative behaviors. The pre-Class DoJo data was gathered in the week before I introduced and began to implement Class DoJo(hereafter named week 0); the post-Class DoJo data was gathered in the third (and last) week of Class DoJo use (hereafter named week 3, with week 1 being the first week of Class DoJo use and week 2 being the second week of Class DoJo use). I averaged the two sets of observer data for both pre- and post-Class DoJo behaviors. Displayed in Table 2 are the averages for each observed behavior, organized into positive and negative behaviors. The numerical values represent the number of instances that behavior was noted during the 30 minute observation of the class as a whole.

Analysis of data indicates an overall increase in the frequency of the identified positive behaviors and an overall decrease in the frequency of the identified negative behaviors. The frequency of raising hands to ask questions, working quietly, focusing on work, using classroom resources, and double-checking work increased between the pre- and post-DoJo observations. Double-checking work and using classroom resources had the highest change in mean frequency. There was no change noted in the mean frequency of students interacting with directions. There was a decrease in the distracted and disruptive behaviors including standing up to ask questions (deemed negative because classroom rules mandate raising hand to minimize disruption of other students), talking to another student, disruptive behavior, defined in the checklist to include talking loudly, dancing, or other behaviors that are disrupting other students, and not focusing on work, defined in the checklist to include looking around, staring into space or at teacher, and out of seat for non-excused reasons. The largest decreases in negative behaviors between the pre- and post-Class DoJo observations were found in instances of students talking to other students and not focusing on work.

Table 2: Mean Frequencies of Behaviors Pre- and Post-Class DoJo Implementation

	Mean Frequency of Behavior Pre-Class DoJo	Mean Frequency of Behavior Post-Class DoJo	Change in Mean Frequency	Percentage Change in Behavior Frequency
Positive, Self-monitoring Behaviors				
Raising hand to ask question	2.5	6.5	4.0	44%
Interacting with directions	0.5	0.5	0.0	0%
Working quietly	90.0	103.0	13.0	6.7%
Focusing on work	89.5	102.5	13.0	6.8%
Using classroom resources	1.0	22.0	21.0	91.3%
Double-checking work	5.0	29.5	24.5	71.0%
Negative Learning Behaviors				
Talking to another student	13.5	2.0	-11.5	74.2%
Disruptive behavior	1.5	0.0	-1.5	100%
Not focusing on work	54.0	28.5	-25.5	30.9%
Standing up and approaching teacher with question	10.5	4.0	-6.5	44.8%

Though causality cannot be attributed solely to Class DoJo because of the many uncontrollable factors within this study, there are consistent trends within the data of an increase in the specific positive, self-monitoring behaviors and a decrease in negative, disruptive behaviors. These trends indicate that the implementation of Class DoJo in this study, including the class discussions about results, the individual goal setting and behavior tracking, and the ability for student and parent access, encouraged students to alter their behavior in the classroom to include more self-regulatory behaviors.

To further elucidate the influence of Class DoJo on student behavior, I compiled and analyzed a class set of the frequencies of behaviors tracked in Class DoJo over the three weeks of use. Due to unexpected schedule changes, I was only able to use Class DoJo for two days in the first week, and three days in the second and third weeks of implementation. Additionally, 10 students were absent for one or more days of Class DoJo use. To create a 'score' I could use to compare individual students and students from week to week, I totaled each student's instances of a behavior in a week, divided that number by the possible number of times he/she could have exhibited that behavior, and multiplied by 100 to create a percentage. For example, Table 3 displays Student 10's Class DoJo records for week 1.

Table 3: Student 10, sample of calculating weekly score

Week 1	4 March	8 March	Week 1 total	Possible (2 days x 5 possible points per day)	Weekly percentage (Week 1 total/possible x 100)
Focusing on work	3	3	6	10	60%
Working quietly	4	5	9	10	90%
Asking questions	0	0	0	10	0%

I used the resulting percentage to identify changes in the frequency of each behavior from week 1 to week 3. Please see the Appendix 3 to see each student's week 1 and week 3 percentage 'score' for all six tracked behaviors, arranged by behavior. Table 4 displays the class average frequency of each behavior for week 1 and week 3, as well as the percentage change from week 1 to week 3. Table 4 shows the class' mean frequency of each behavior during week 1, during week 3, and the percentage change in behavior from week 1 to week 3. I ran t-tests on the change in mean frequency of each behavior to identify statistically significant behavior changes (α=0.05).

Table 4: Mean frequency of behavior compared to possible frequency

	Week 1 mean frequency by student	Week 3 mean frequency by student	Percentage Change from Week 1 to 3
Raising hand to ask question	10.0%	9.7%	-0.3%
Interacting with directions	3.6%	0%	-3.6%*
Working quietly	94.8%	95.8%	1.0%
Focusing on work	71.7%	88.4%	16.7%*
Using classroom resources	0%	3.4%	3.4%*
Double-checking work	0%	2.3%	2.3%*

* $p \leq .05$

As a result of this analysis, I determined that there were some statistically significant increases in frequency of behaviors and one statistically significant decrease in frequency of behavior, and many increases and decreases in the frequency of behaviors from week to week that did not reach statistical significance. There were statistically significant increases in the frequency of students focusing on work, using classroom resources, and double-checking work. These increases mirror the increases in the instances of those same behaviors between the pre- and post-Class DoJo observations, providing additional evidence that the implementation of Class DoJo helped students to increase the frequency of self-regulatory behavior. There was a statistically significant decrease in the instances of students interacting with directions; this can possibly be explained by the difference in the types of assignments student completed during week 1

and week 3. During the times I used Class DoJo in week 1, students completed three assignments that each included a printed set of directions. During the times I used Class DoJo in week 3, students completed two larger writing assignments, but the directions for both of those were stated verbally and displayed on the board rather than printed on each students' paper. Therefore, students were limited in their opportunity to interact with the directions during week 3. Though students, on average, raised their hands less during week 3 than week 1, the change was very small (0.3%), which indicates more of a maintenance of behavior than a decrease. There were no statistically significant change in the frequency of students working quietly over the course of the implementation of Class DoJo; a ceiling effect is one possible explanation for this. The class average for instances of working quietly out of the total possible instances was 94.8% in week 1, leaving little room for a significant increase in frequency of the behavior. Overall, the tracked behavior from Class DoJo confirms the trends established in the pre- and post-Class DoJo behavior observations.

The last source of data about the influence of Class DoJo on student behavior is the reflective journal describing my observations about the implementation of Class DoJo. During the independent literacy block each day, I typically circulated throughout the room observing and inputting student behavior into Class DoJo using an iPad. In my reflective journal, I noted several instances of students reacting to me picking up my iPad. Students, upon spotting the iPad in my hands, tended to turn to face their work, sit up straighter, stop talking, and look down at their book or paper. These sorts of behaviors in response to the iPad also occurred during other sections of the day when I was not actively using Class DoJo. I also noticed students tracking my progress around the room, though I cannot say with confidence that such behavior is the result of the implementation of Class DoJo. Students did tend to respond to my proximity and the direction of my gaze; as I approached their table group or turned my gaze in their direction, many students again turned to face their desk, sat up, quieted down, and looked at the materials on their desks.

Do students enjoy using Class DoJo?

I considered student response to Class DoJo to be an important aspect of this study because I think a good behavior management system is engaging and understandable for both the teacher and the students. Furthermore, the students interacted with Class DoJo in a different way than with the existing token economy classroom management system, and I was interested in how students felt about using this dissimilar system. Students were asked to identify elements of Class DoJo they liked, elements they did not like, and explain why they would or would not like to use the system again. Students' responses were overwhelmingly positive about Class DoJo and students presented a variety of favorite things and concerns. Student responses, organized and presented by common ideas, are displayed in Table 5.

Table 5: Student responses to anonymous, open-ended survey questions

Student Response	Representative Quote	N
"What did you like?"		
Seeing the results (individual or whole class)	"I liked how I could read my DoJo scores" "I like how at the end of the week you [the teacher] show[ed] the chart"	10
Creating/picking avatar	"I liked the little cute monsters they were adorable" "if we didn't like our monster we could change it if we wanted"	9
Identifying areas to work on	"I like it because it shows some stuff you need to improve, what you need to work on"	9
Finding areas of strength	"I work[ed] quietly when I was working. And reading directions"	5
Setting and trying to beat goals	"I liked it when we got to write down what we were going to do for next week"	3
Reaching goals/seeing improvement	"I got to see how I improved every week on my behavior"	2
Booklet (in which students tracked behavior, set goals)	"I liked the booklet that we got to fill out and the graph that we got to look at"	2
"What did you not like?"		
Nothing specified	"I liked everything about it!"	18
Not reaching goals/showing improvement (individual or whole class)	"I got a bit frustrated that I never beat my goals"	2
Technical difficulties	"I couldn't get on and create my creature"	1
Confidentiality	"What if someone saw our score!"	1
Being observed	"I did not like being watched"	1
"Would you want to use it again? Why?"		
Yes		**22**
Fun/exciting/cool	"I would use it again because it is a fun and exciting experience"	11
Potential for improvement	"setting goals and reaching them can help me get better scores"	5
The avatar	"the little creature monsters are so cute!"	4
Be able to see behavior frequencies	"I would like to see how we were doing in school"	3
Identification of problem areas	"I want to see what I need to work on"	2
Potential for improved grades	"it got my grades up"	2
Positive experience	"It is a very good learning experience. I loved it! ☺"	1
No		**1**
Having to write about areas that need improvement	"I had to write about the stuff that I had to improve"	1
Being watched	"I did not like being watched"	1

An analysis of the responses to the anonymous, open-ended survey indicates that the majority of students involved in the study had positive experiences with Class DoJo and would like to use it again. Based on the data in Table 5, students found the system both engaging and helpful. Some students raised concerns about technical difficulties, confidentiality, goal setting and achievement, and being watched.

Conclusion

To succeed as students, children need to develop self-regulatory skills (McClelland et al., 2011; Zimmerman, 1996; Zimmerman, 2002). However, students are often rewarded for a lack of misbehavior instead of specific positive behaviors. Rather than reinforcing specific positive behaviors, many popular classroom management systems discourage misbehavior; in this situation, students are inconsistently supported in the development of self-regulatory behaviors. Through the implementation of Class DoJo, students were able to create individual behavior goals, think specifically about how to reach those goals, and have open discussions with their teachers in individual and whole group settings about the included positive self-monitoring behaviors. Through this process, the class as a whole increased the frequency of self-regulatory behaviors and decreased the frequency of disruptive behaviors. In response to the guiding question about the influence of Class DoJo, focused on self-monitoring behaviors, on student conduct, the data indicates that Class DoJo was effective in supporting students in thinking about their own learning behaviors. Students responded positively to the system overall as well as to many specific aspects of the system, and seemed to enjoy the use of the system and the whole class discussions.

Limitations

This study was limited by both expected and unexpected scheduling conflicts. The time allotted for this study was four school weeks, each consisting of five full days of school; however, during the middle two of those weeks, the students in the study underwent state-mandated standardized testing on Tuesdays and Wednesdays. Going into the study, I was aware that I would have to work around testing, and planned to use Class DoJo three times per week. During the second week of the study (the first week of testing and the first week of Class DoJo use), all schools in the county were closed for a weather-related emergency, so the testing schedule was changed and, to accommodate the new schedule, I was only able to use Class DoJo two days out of the week instead of three.

Another limitation of this study, tied directly to the testing schedule described above, was the great diversity in the types and number of assignments students were asked to complete during independent literacy work time. In the first week of the study, before I implemented Class DoJo, students completed 10 different assignments, all of them with written directions and designed to help students review and prepare for the upcoming tests. In the second week of the study, students completed three assignments, again with typed directions and designed for test review and preparation. In the third week, students completed two assignments, both with typed directions; one was designed as test review and the other was an extended creative writing and illustration piece. In the last week of the study, students completed two assignments, neither of which included typed directions and both of which were creative writing and social studies-themed assignments. Directions for both of these assignments were provided on the board, but students did not

have the chance to demonstrate interaction with directions as they could have on work with typed directions.

Implications

The implication of the study is that Class DoJo, as a customizable online behavior tracking system, could be an effective tool for supporting students in increasing positive self-regulatory behaviors. In practice, the method of Class DoJo implementation used for this study is impractical and probably unsustainable for an entire school year; however, modifications of this method would be more practical and sustainable while perhaps creating the same result. Future research might consider a less regimented implementation of the online behavior tracking system in a way that is more natural for the teacher and the students. Though observing each student five times per day during independent literacy work narrowed the parameters of this study enough to make it possible in the allotted four-week timeframe, the rigid schedule of observation was often unnatural for both me as the observer and, seemingly, for the students, who displayed hesitation to disturb me and responded visibly to the stimulus of the iPad. Additionally, the constrictions of my method required that I build at least 30 minutes of independent literacy work into each day, which was often difficult and required the inclusion of disjointed activities. This study was limited to a single third-grade classroom; future research might consider the same or a similar study in other classrooms representing a variety of student populations, ages, and situations. Further research might also study the long-term effects of using Class DoJo to highlight self-monitoring behaviors and the effect of using Class DoJo or a similar system for an elongated period of time. Another interesting and possibly meaningful set of data that might be collected in future research is how often students accessed their behavior reports at home, to further elucidate both how the online system influenced student behavior and how students interacted with and felt about using Class DoJo.

Over the course of this study, the observed class increased the frequency of behaviors that they and researchers consider to be essential to student success. Additionally, the focus placed on the positive, self-regulatory behaviors are associated with a decrease in the frequency of negative, disruptive behaviors without the teacher ever directly addressing those behaviors as part of Class DoJo or during teacher-student conversations about the behaviors for which students received commendations in Class DoJo. Students generally found the online system to be fun, engaging, and a compelling forum to challenge themselves to improve. In terms of student development and student engagement, the use of Class DoJo to commend students for exhibiting positive, self-regulatory behaviors was, in this study, a success.

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Appendix

Appendix 1: Behavior Checklist

Behavior checklist

Observer: Focus on a group of 4 students sitting next to each other for 1 minute. Record, using tallies, each time you see a student exhibit the listed behaviors. If two students are exhibiting the same behavior at the same time, record 2 tally marks. If a student switches behaviors during the minute (e.g, work quietly then talking to a friend), record a tally in both categories. After 1 minute, move your observation onto the next group of 4 students, following the same procedure. In this manner, observe the entire class (6 groups of 4). Please rotate around the class in this manner 5 times (a total of 30 minutes of observation) during independent work time.

Observer: _____

Date: _____

Time started: _____

Time finished: _____

Behavior	Description	Number of times behavior exhibited by students	Total
Raising hand to ask question	Quietly raising hand and waiting for teacher to respond		
Coming to teacher for help	Walking up to teacher to ask question about material		
Interacting with directions and/or printed material	Underlining, circling, making notes in margin		
Working quietly	Exceptions: asking teacher a question		

Focusing on work	In seat, working NOT staring into space, at teacher, around room, etc. NOT playing with eraser, doodling etc.		
Using classroom resources	Retrieving, using, returning dictionary, thesaurus, reading book		
Double-checking work	Reading over completed work, adding more details without being prompted, editing completed work		
Talking to another student	The subject of the conversation does not matter—any conversation		
Disruptive behavior	Talking loudly, dancing without expressed permission, any generally disruptive behaviors		
Not focusing on work	Looking around, staring into space, at teacher, etc. Out of seat (exceptions: sharpening pencil, using bathroom, talking with teacher, retrieving supplies/resources)		

Appendix 2: Student Survey

How do you feel about the Class DoJo?

What did you like?

_____
_____
_____
_____
_____

What did you not like?

_____
_____
_____
_____
_____

Would you want to use it again? Why?

_____
_____
_____
_____
_____
_____

Appendix 3: **Class data set of tracked behaviors, reported as percentages**

	Raising hand to ask question		Interacting with directions		Working quietly		Focusing on work		Using classroom resources		Double-checking work	
Week	1	3	1	3	1	3	1	3	1	3	1	3
Student 1	10.0	20.0	10.0	0.0	90.0	100.0	20.0	100.0	0.0	10.0	0.0	0.0
2	10.0	0.0	0.0	0.0	90.0	93.8	90.0	93.8	0.0	0.0	0.0	12.5
3	20.0	20.0	0.0	0.0	90.0	100.0	50.0	90.0	0.0	0.0	0.0	0.0
4	20.0	12.5	20.0	0.0	90.0	100.0	70.0	93.8	0.0	6.3	0.0	6.3
5	10.0	31.2	0.0	0.0	100.0	100.0	70.0	93.8	0.0	12.5	0.0	0.0
6	10.0	12.5	10.0	0.0	100.0	93.8	100.0	68.8	0.0	6.3	0.0	0.0
7	0.0	10.0	0.0	0.0	100.0	100.0	100.0	90.0	0.0	0.0	0.0	0.0
8	0.0	0	0.0	0.0	90.0	87.5	60.0	81.2	0.0	6.3	0.0	0.0
9	0.0	0	0.0	0.0	100.0	100.0	80.0	94.1	0.0	0.0	0.0	0.0
10	10.0	6.3	10.0	0.0	100.0	100.0	70.0	100.0	0.0	6.3	0.0	6.3
11	10.0	6.3	0.0	0.0	80.0	100.0	60.0	93.8	0.0	0.0	0.0	0.0
12	10.0	6.3	10.0	0.0	100.0	100.0	80.0	100.0	0.0	6.3	0.0	0.0
13	20	12.5	0.0	0.0	80.0	93.8	60.0	75.0	0.0	6.3	0.0	6.3
14	10	0	0.0	0.0	100.0	93.8	70.0	81.3	0.0	0.0	0.0	0.0
15	10	6.3	0.0	0.0	100.0	100.0	80.0	93.8	0.0	0.0	0.0	0.0
16	0	25.0	10.0	0.0	90.0	100.0	80.0	100.0	0.0	6.3	0.0	0.0
17	20	18.8	0.0	0.0	90.0	100.0	70.0	100.0	0.0	12.5	0.0	6.3
18	20	6.3	10.0	0.0	90.0	100.0	60.0	100.0	0.0	0.0	0.0	6.3
19	10	10.0	0.0	0.0	100.0	60.0	80.0	50.0	0.0	0.0	0.0	0.0
20	10	0.0	0.0	0.0	100.0	100.0	60.0	90.0	0.0	0.0	0.0	0.0
21	20	6.3	0.0	0.0	100.0	87.5	90.0	81.3	0.0	0.0	0.0	0.0
22	0	12.5	0.0	0.0	100.0	93.8	70.0	81.3	0.0	0.0	0.0	0.0
23	0	0.0	0.0	0.0	100.0	100.0	80.0	81.8	0.0	0.0	0.0	9.1