

The Effects of an Interdependent Group-Oriented System
Positive Behavior Support called Secret Student on Student Behavior
at a Public Separate Day Facility for Students with Severe Behavior

BY

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Abstract

This paper investigates the effects of an interdependent group-oriented positive behavior support called Secret Student on the behavior of students attending school at a public separate day facility for students with severe behavior. The study's participants include 61 students from middle school and high school. Students' average percent of points earned during baseline were compared to the average percent of points earned during the implementation of Secret Student (trial period). Two high school clusters; one cluster whose students are considered "conduct disorder" (HS-CD), and one cluster whose students are considered "emotionally fragile" (HS-EF) were compared to determine if the effect of Secret Student varied by type of student. Two middle school clusters; one cluster with students in 6th and 7th grade (MS-6&7), and one cluster with students in 8th grade (MS-8) were compared to determine if the effect of Secret Student varied by middle school grade level. The study found no noticeable difference between the baseline period and the trial period within all four clusters. The study also found no noticeable difference in the effect of Secret Student between the HS-CD and HS-EF clusters as well as no noticeable difference between the MS-6&7 and MS-8 clusters.

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The Effects of an Interdependent Group-Oriented System

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Schools that provide services for students who have extreme behaviors rely heavily on individual incentives. That is, whether or not a student obtains an incentive is contingent only on that student's behavior. If a student acts in accordance with predefined behavioral expectations, that student obtains access to an incentive that is intended to increase the behavior. If the student fails to meet the behavioral expectations, the student is either denied an incentive or is subject to consequences intended to decrease the behavior. In contrast to the individual-oriented contingency systems just described, Professor Dylan William (*The Classroom Experiment*¹) introduces a year eight general education class at the Hertswood School in England to a group-oriented contingency system positive behavior support he calls "Secret Student". In William's version of Secret Student, each day a student is picked at random. The teachers know the student's identity, but the students are unaware who was chosen. Teachers then rate that student in each class based on behavior indicating with a check mark if the student has met the behavioral standards. If the student earns enough check marks in a day, the class earns a point and their identity is revealed. If the student does not earn a point, their identity remains hidden from the other students. If, by the end of the semester, the students earned enough points, they received an incentive. In the case of Hertswood School, it was a trip to an amusement park. The students at Hertswood School were not identified as having behavioral problems. What would a support like Secret Student look like in a public separate day facility for students with behavioral issues? How effective would a group-oriented contingency positive behavior support be on the varying types of behaviorally challenged students in a high school setting? Would a group-

¹ BBC Two - <http://www.bbc.co.uk/programmes/b00txzwp>
Episode 1 - <http://www.youtube.com/watch?v=J25d9aC1GZA>
Episode 2 - <http://www.youtube.com/watch?v=1iD6Zadhg4M>

oriented contingency system positive behavior support be effective at both the high school and middle school level? These are the questions that I explore in this research paper.

Group-oriented contingency systems have been studied since the 1950's (Hayes, 1976). The Good Behavior Game (GBG) is one type of group-oriented contingency system that has been shown to be effective across classrooms and subjects (Barrish et al., 1969). The GBG works by providing access to incentives based on one, several, or all students meeting predetermined contingencies. The contingencies consist of behavior that the implementer wishes to reduce and intervals at which the behavior will be measured. When students exhibit the behavior, they receive a mark. If the class, group, or individual being tracked doesn't earn marks in excess of a predetermined amount, students have access to the incentive. A similar system, the Caught Being Good Game (CBGG) has similar effects on behavior (Wright & McCurdy, 2011). The CBGG runs essentially the same as the GBG except positive behaviors are tracked and students earn incentives based on their exhibition of acceptable behavior. Both the GBG and the CBGG were rated equally acceptable by teachers and students (Wright & McCurdy, 2011).

School based prevention and intervention programs have been shown to be effective at reducing unwanted behaviors and increasing desired behaviors in students categorized under Emotional Disturbance. This includes reducing off-task and aggression behavior, and improving social and academic skills (Reddy, Newman, Thomas, & Chun, 2008). Although the differences are small, school based systems that primarily use behavior interventions and counseling have shown a slight advantage over other modes (e.g. separate settings, social competence, peer mediation) (Wilson, Lispey, & Derzon, 2003). The effects are independent of individual characteristics of the students (e.g. age, sex, race) (Wilson et al., 2003).

Even though the programs are effective, there are barriers to the implementation of contingency systems. The majority of these barriers tend to be due to beliefs held by staff (Bambara, Goh, Kern, & Caskie, 2012), but also include time and funding. School personnel often see punishment as the true solution to behavior problems (Bambara et al., 2012). School staff often perceive interventions that don't produce quick results as failing (Bambara et al., 2012). Another major barrier to implementation is inadequate time to develop and implement these systems due to busy schedules (Bambara et al., 2012). Inadequate funding for programs is another obstacle for the systems' implementation and sustainability (Coffey & Horner, 2012). These, among other barriers, may be why Wilson, Lipsey and Derzon (2003) found that demonstration programs¹ produced a larger effect on behavior than routine practice programs² (Wilson et al., 2003). Researchers implementing contingency systems usually bring their own staff, funding and training. School implemented contingency systems are generally add-ons and use existing funding and staffing resources. There are things schools can do to improve the implementation of contingency systems. School staff reported that leadership personnel (e.g. principals, counselors, coordinators) were the main component to successfully implementing the systems (Coffey & Horner, 2012). Communication from leadership helps reinforce the importance of the program to school staff (Coffey & Horner, 2012).

A recent review of group contingency systems provides evidence of effectiveness in reducing disrupting behavior in the classroom (Maggin, Johnson, Chafouleas, Ruberto, & Berggren, 2012). Several types of group-oriented contingency systems have been identified; Independent Group-oriented Contingency Systems, Dependent Group-oriented Contingency Systems, and Interdependent Group-oriented Contingency Systems (Litow & Pumroy, 1975; Skinner, Williams, & Nedderniep, 2004). Independent group-oriented contingency systems

¹ Demonstration programs are "those implemented and evaluated by a researcher mainly for research and demonstration purposes" (Wilson et al., 2003).

² Routine practice programs are "those in which the program being studied already exists in the school on an ongoing basis" (Wilson et al., 2003).

are characterized by a set of contingencies that apply to the group, but incentives are accessed by students only when their individual behavior meets the set criteria. Dependent group-oriented contingency systems are defined as systems in which behavior contingencies apply to the entire group, but students are allowed access to incentives when the behaviors of one or more students adequately meet the contingencies. Interdependent group-oriented contingency systems are similar except access to incentives is based on the behavior of the entire group (Litow & Pumroy, 1975; Skinner et al., 2004). Secret Student permits access to incentives based on the culmination of the performance of individual students and all students have the ability to be the student who earns a point. The contingencies are also in effect over a period of days. These two components of Secret Student create an incentive that is accessible based on the behavior of the entire group. If the entire group were to perform poorly, it is unlikely the group would meet the contingencies.

Carr et al. (2002) defines positive behavior supports as such:

By positive behavior, we mean all those skills that increase the likelihood of success and personal satisfaction in normative academic, work, social, recreational, community, and family settings. By support, we mean all those educational methods that can be used to teach, strengthen, and expand positive behavior, and all those systems change methods that can be used to increase opportunities for the display of positive behavior.

Secret Student focuses on students' positive behaviors, attempts to create a positive school experience, and uses methods intended to strengthen students' positive behaviors by providing positive incentives for students exhibiting positive behavior. Thus, Secret Student would be categorized as an interdependent group-oriented contingency system positive behavior support.

There are several draw backs to independent contingencies behavior systems. These

systems can be time consuming, have limited incentives, and can have a negative impact on staff and students. Developing and maintaining individual contingencies and tracking individual student behaviors for a classroom or school is time consuming (Hayes, 1976). Developing individual plans for students, even in small classroom settings, requires identifying contingencies and incentives for each student. Even if the independent system incorporates group contingencies and incentives (i.e. an independent group-based contingency system), the pool of incentives to choose from is limited (Skinner, Cashwell, & Dunn, 1996). For example, academic incentives may be unavailable due to legal issues with denying students with disabilities access to such academic opportunities (Skinner et al., 1996). There are also procedural issues with allowing access to incentives for some students but not the entire group. Supervising students who didn't earn the incentive is problematic and can cause resentment in the teachers (Skinner et al., 1996). These issues may make incentives such as class trips impractical or disagreeable to staff (Skinner et al., 1996). Individual-oriented and independent group-oriented contingencies systems can create a divide between students who are already close to meeting the criteria and those with the largest behavioral gap to make up (Skinner et al., 1996). These systems can also encourage competition between students leading to jealousy and stealing (Hayes, 1976).

Interdependent and dependent group-oriented contingency systems are alternatives to individual-oriented and independent group-oriented contingency systems that overcome some of the shortcomings of these systems. The assortment of incentives available under these systems can easily include large group and academic incentives without the pitfalls of these individual-oriented and independent group-oriented systems (Skinner et al., 1996). Since all students receive the incentives, a class system of haves and have nots does not form in the classroom or school (Skinner et al., 1996). Students exhibiting behavioral issues may be encouraged to behave

appropriately and they may develop positive feelings about school when given access to incentives (Skinner et al., 1996; Theodore, Bray, Kehle, & Jenson, 2001). Because individuals are given a common goal, interdependent and dependent group-oriented contingency systems have been shown to promote cooperation (Salend & Lamb, 1986; Gresham & Gresham, 1982) and have a positive effect on classroom engagement (Ling, Hawkins, & Weber, 2011). Within these systems, peers may act as reinforcers (Gresham & Gresham, 1982) which can increase the effectiveness of the system.

Interdependent and dependent group-oriented contingency systems are not without their faults and criticisms. Setting contingencies that are effective for the entire class may be difficult as they may be too low or high for individuals, especially if there is a wide gap between student behavior (Skinner et al., 2004). Since teachers are denying access to incentives to some students based on the behavior of other students, they are modeling a system of unfairness (Romeo, 1998). Students whose behavior is not at issue may feel it unfair that they don't receive an incentive based on the behavior of other students (Skinner et al., 1996). Teachers may be resentful of giving poor performing students access to group incentives and may withhold incentives from those students (Skinner et al., 2004). Students may sabotage the program or decide to not participate if they are not interested in the incentive (Barrish et al., 1969). Students may be targeted by other students for denying them access to incentives (Hayes, 1976; Romeo, 1998). Since retribution from other students is not confined to the classroom or under the control of the teacher, peer-initiated punishment may be experienced outside of the classroom and for an undetermined amount of time (Romeo, 1998). Although there is evidence showing an adverse impact to students' social standings when contingencies are not met, it is not a certainty (Heering & Wilder, 2006). There is also a risk that students who are generally well behaved may begin to

misbehave when they don't receive an incentive due to other students (Romeo, 1998).

There are suggestions that can minimize some of these faults and generally increase the overall effectiveness of interdependent and dependent group-oriented contingency systems (as well as contingency systems and behavior supports in general). When determining what type of group contingency system to use, if a small number of students are exhibiting the unwanted behavior, target individuals. If the behavior is common amongst all the students, target the entire group (Hayes 1976). When setting incentives to be delivered, randomizing the incentives so students aren't sure what incentive they will receive may increase student interest (Musser, Bray, Kehle, & Jenson, 2001; Theodore et al., 2001). In order to target a group of students with a wide gap in behavior, teachers have options that will create contingencies that reduce the gaps impact. Along with randomizing incentives, randomizing the contingencies can be effective (Theodore et al., 2001; Skinner et al., 2004) and may be a way to target students of varying degrees of behavior. In fact, there is evidence that randomizing all components of the behavior system is just as effective as non-randomized systems (Kelshaw, Sterling, & Henry, 2000). Teachers can also setup different contingencies for students, use class averages, randomly select contingencies, or use cumulative contingencies (Skinner et al., 2004). On occasion, group-oriented contingency system administrators may want to cheat and allow students access to an incentive in order to keep students engaged (Skinner et al., 1996). The school should make a big deal out of the results and allow students to interact with the system, for example, allowing students to draw for the incentive (Skinner et al., 1996). In order to reduce retribution, schools should limit information that would result in students being targeted by peers, such as the name of the individuals who failed to meet the contingencies (Skinner et al., 1996). Using a system that incorporates multiple effective components can increase the effectiveness of a school's behavior

support. Using both group-oriented and individual contingency system simultaneously is a way to ensure all students are targeted and reinforced (Skinner et al., 2004). Musser, Bray, Kehle and Jenson's (2001) research indicates that although precision requests programs, mystery motivators, token economies, response cost and antecedent strategies are all effective individually, designing a system that incorporates all these components is an effective strategy for decreasing unwanted classroom behavior (Musser et al., 2001).

Along with making sure the contingency systems are most effective and target the most students, schools need to ensure that the staff implementing the programs, mainly teachers, have the supports in place necessary for successful implementation. Strong leadership from school administrators and the individuals developing the system is essential (Coffey & Horner, 2012). Schools should also provide adequate training and sufficient planning time for the system's implementers (Bambara et al., 2012; Musser et al., 2001; Wilson et al., 2003). Finally, adequate funding provided by schools has to be available and reliable for the implementation of a contingency system and its long-term sustainability (Coffey & Horner, 2012).

Methods

The Secret Student behavior support for this study was setup by the Positive Behavior Interventions and Supports (PBIS) team. This team is made up of teachers and staff at a public separate day facility for middle school and high school students with severe behavioral issues. Although the basic premise for the Secret Student behavior support in this study kept in line with Williams' original implementation, there were several modifications made by the PBIS team to tailor the support to students. More than one student was picked to be the secret student each day. Due to the high level of off-target behaviors by students, multiple students were picked to increase the chances that at least one student picked would meet the contingencies. William's

original Secret Student had only one incentive that became available after an extended period of time. The Secret Student support in this study consisted of several levels where each subsequent level included an increase in the number of points needed as well as an increase in the amount of time between incentives. The incentives themselves were setup to be increasingly valuable as the levels increased. The PBIS team felt an incremental approach would be more effective as the students struggle with maintaining their behavior to achieve long-term goals. The Secret Student support in this study also benefited from behavioral tracking systems (see Appendix A) already in place at the school. Due to this tracking system, it was unnecessary to inform teachers who the secret students were. Students were picked after the school day ended, thus eliminating any teacher bias. Finally, in order to avoid losing student interest when they didn't earn the incentive, students were allowed to try again for their current level if students did not earn enough points to obtain the incentive.

Participants

Participants included 61 students who attend school in a separate day facility. In order to attend the school, students must have an Individualized Education Program Plan (IEP). Students that attend the school also have a history of severe behavioral issues at school. Every student has an individualized behavior intervention plan (BIP).

The school itself is divided into middle and high school students. The high school is further divided into two “clusters”; one cluster for students the staff refers to as Emotionally Fragile, and one cluster for students the staff refers to as Conduct Disorder students. The middle school clusters are separated into one cluster of 6th and 7th grade students and one cluster of 8th grade students. Each middle school cluster has a mixture of students categorized as Emotionally Fragile and Conduct Disorder. Although there is no definitive definition, “Emotionally Fragile”

students are generally those students who are on the autism spectrum or have a severe mental illness. Their behaviors tend to be harmful to themselves or consist of emotional breakdowns. These students may lash out and harm others, but usually during a breakdown. “Conduct Disorder” students are those students who are purposefully harmful to others. They specifically go out of their way to do harm to others and do not feel remorse for their actions. The behavior of students identified as Conduct Disorder generally has environmental causes. Henceforth, I will refer to the clusters as follows: Middle School 6th and 7th grade students (MS-6&7), Middle School 8th grade students (MS-8), High School Emotionally Fragile (HS-EF), and High School Conduct Disorder (HS-CD). Students were excluded from the sample if they were not present for the entire research period. The actual number of students in each cluster at a given time varied due to students entering or exiting the school throughout the baseline and implementation. Samples from both the MS-6&7 and MS-6&7 consisted of 9 students each. The HS-CD sample consisted of 19 students and the HS-EF sample consisted of 24 students.

The students included in the study are only those individuals who were present for the entire baseline and trial period. Students who were not present for the baseline, came in after the baseline started, and left before the baseline ended were not included in the study. Students who were present for the baseline, but were not present for the trial period, or left before the trial period ended were not included. Finally student’s who were absent from school for more than one consecutive week during the baseline or trial period were not included. In total, 77 students who attended the school during the baseline and trial period were excluded. The students excluded from the study represented 56% of the students who attending the school at any given time during the study. See Table 1 to view a breakdown of these numbers by cluster.

Materials

Teachers were supplied with several items to assist with the implementation of Secret Student. Each teacher was provided with a presentation they shared with the class before the start of Secret Student. Teachers were also supplied with a list of level criteria and incentives. Each cluster was supplied with a large poster that displayed each level's incentive and criteria. The posters were displayed near the cluster advisor offices as this was the most frequented area by all students. When students reached a level, it was noted on the poster by placing the words “completed” over the level's incentive. The teachers used a point system sheet that each student carried with them to rate each student's behaviors (see Appendix A). Two posters promoting Secret Student were distributed to the teachers for display in their classrooms as well as on walls throughout the school. The materials needed for incentives varied between clusters (see Appendix B).

Two spreadsheets were used to track the progress of Secret Student. One spreadsheet consisted of a roster of students for each cluster and the dates students were selected. The second spreadsheet tracked the number of points earned each day and the total number of points currently earned for each level. A word processing document was created and updated daily to track the names of the students who earned points, how many points each cluster had, and how many days were left to try to reach the next level. This information was announced the following morning. A random number generator¹ was used to pick students.

Procedure

Data Collection. Data was collecting using a daily point sheets carried by every student (see Appendix A). The point sheets tracked six areas of behavior, each contributing a percentage of the total possible points each hour. Students were scored on two minor areas of behavior;

¹ <http://www.stattek.com/statistics/random-number-generator.aspx>

being on time (3.5%) and being a self-starter (3.5%). They were also evaluated on four major areas of behavior: work continuity (21%), following directions (24%), manners (24%), and managing interactions (24%). Students earned points for being on time (5 points), being a self starter (5 points), work continuity (30 points), following directions (30 points), managing interactions (30 points) and manners (30 points) for a total of 130 points per period for seven periods each day. Each day, students also earned points for following directions (10 points), managing interactions (10 points) and manners (10 points) during for breakfast (30 points total), lunch (30 points total) and at end of the day (the time between the end of seventh hour and when they board the bus) (30 points total), for a total of 90 points. Student could earn a total of 1000 points per day. This number was expressed in terms of money, each point being worth 1 cent for a total of \$10.00. At the end of the day students figured the percentage of points they earned for the day. Based on the percentage earned, students were placed one of three levels; red (below 79%), yellow (80-94%) and green (95-100%). Based on the student's level, they could obtain bonus points; points could be doubled on level green, points could be multiplied by 1.5 on level yellow, level red did not allow for these bonus points. Students could also earn 200 bonus points each for using appropriate language, not bullying, and appropriate hallway behavior throughout the day that could be added after the level bonus was calculated. The final daily tally of total points possible was 2600 points (\$26.00).

Baseline. During the eight weeks (10/15/12 to 12/21/12) that baseline data was collected, students carried a point sheet with them throughout the entire school day. Students were provided privileges depending on their level and an accumulation of "points" they could trade for goods or access to activities. The students' access to incentives was based solely on their behavior. Students could use the points they earned to purchase access to incentives (see

Appendix B). Students could also use the points they earned to purchase items in the school store (e.g. food, drinks, trinkets). Students were given access to some activities based on their current level (see Appendix B). Students were also given “Above and Beyond” coupons from staff when their behavior went above and beyond what was reasonably expected. They could use the coupons to obtain various incentives (see Appendix B).

Implementation. After the baseline data were collected, the school added the interdependent group-oriented contingency system positive behavior support called Secret Student to the school-wide positive behavior supports already in place. Students continued to gain access to the same individual incentives available during baseline. The idea behind Secret Student is for students to work together for a common goal. If the group of students meets the criteria set, all students, regardless of their individual performance, receive the incentive. The school staff hoped that students would use positive peer pressure to influence each other to behave appropriately. Secret Student worked as follows:

At the end of each day, students from each cluster were picked at random to be the secret student. Because of the larger number of students in the high school clusters, there were more students chosen (see Table 2). The students were chosen by first entering their names into a spread sheet, each name corresponding with a row number. Using a random number generator, numbers were generated for each of the four clusters. Once chosen, each student’s percentage was verified using a database that was updated daily by teachers. Students earned a point for their cluster if they earned 95% of their points or higher (950 out of 1000 points). Every morning, the names of students who earned a point for their cluster were announced along with a status update of the clusters' progress toward obtaining an incentive (how many points they earned and how many days were left to reach the next level). Students' names were not

announced if they did not earn a point in order to avoid retribution. While teachers were informed of the information via email, they were not told the names of students who had not earned points. The attainment criteria were set by the school's PBIS team. Level incentives were determined by the staff of each cluster.

The Secret Student support consisted of six levels and a bonus incentive. Each level's attainment criteria increased in difficulty (see Table 3), but each level had a “larger” incentive (see Table 4). Once a cluster reached a level, all the students in the cluster received the incentive regardless of their individual performance. When a cluster reached a level, students were informed via the morning announcement. Then students immediately began working towards achieving the next level. The students received their incentives as soon as possible. If students reached level 6, they automatically obtain the bonus incentive. If a cluster did not reach the next level, the cluster started over and tried again for their current level. A three week buffer was included to allow clusters enough time to try again if necessary. The length of time Secret Student was implemented for each cluster varied slightly due this buffer and the clusters reaching levels at different times (see Table 5). When a cluster did not achieve a level, it was not announced to the school. Teachers were informed daily via email and informed the students that they did not make the level. Teachers told student they would be trying again for the level and reminded them of the criteria for meeting the level.

Results

This study set out to answer two questions:

1. Would an interdependent group-oriented contingency system positive behavior support have a different effect on the percentage of daily points earned by students in a public separate day facility high school designated and grouped as Conduct Disorder (HS-CD) compared to students in a public separate day facility high school designated and grouped as Emotionally Fragile (HS-EF)?

2. Would an interdependent group-oriented contingency system positive behavior support have a different effect on the percentage of daily points earned by a group of 6th and 7th grade students in a public separate day facility middle school (MS-6&7) compared to a separate group of 8th grade students in a public separate day facility middle school (MS-8)?

The study intended to answer the first question by comparing students in a public separate day facility high school grouped by the school into two behavioral types, Emotional Fragile or Conduct Disorder. The study intended to answer the second question by comparing students in middle school grouped into a group of 6th and 7th grade students and a group of 8th grade middle school students who attend a public separate day facility. During the study students earned a daily percent based on their behavior that was calculated by dividing the number of points the students earned by the total points possible that day (1000). To compare each group, students' average percent earned for the baseline period was compared to their average percent earned during the trial period to determine if there was a change. Each student's data was then graphed to determine if there was a noticeable trend for each middle school grade level and high school behavioral type. The high school groups with different behavioral types were compared to see if a trend did exist, did the trend vary between the behavioral types. Finally, the different middle grade levels were compared to see if a trend did exist, did the trend vary between the middle school grade levels.

HS Cluster Comparison

The data in Figure 1 and Figure 2, the HS-EF student graph and HS-CD student graph, shows no indication that Secret Student had an effect on student average percents. Those students whose average percent was high during the baseline period continued to be high during the trial period and students whose average percent was low during baseline generally continued to be low during the trial period. Although both the HS-EF and HS-CD clusters show similar

trends in the students' average percent, there are several noticeable differences between the clusters (see Figure 3). The HS-EF cluster had an average baseline percent (89.6%) substantially higher than the HS-CD cluster average baseline percentage (66.89%). This trend continued during the trial period with the HS-EF cluster's average percentage (90.04%) being substantially higher than the HS-CD cluster's average percentage (64.53%). There was a slight increase in the HS-EF cluster's average percent (+.44%), while there was a slight decrease in the HS-CD cluster's average percent (-2.37%).

Figure 1 - HS-EF Student Average Percent

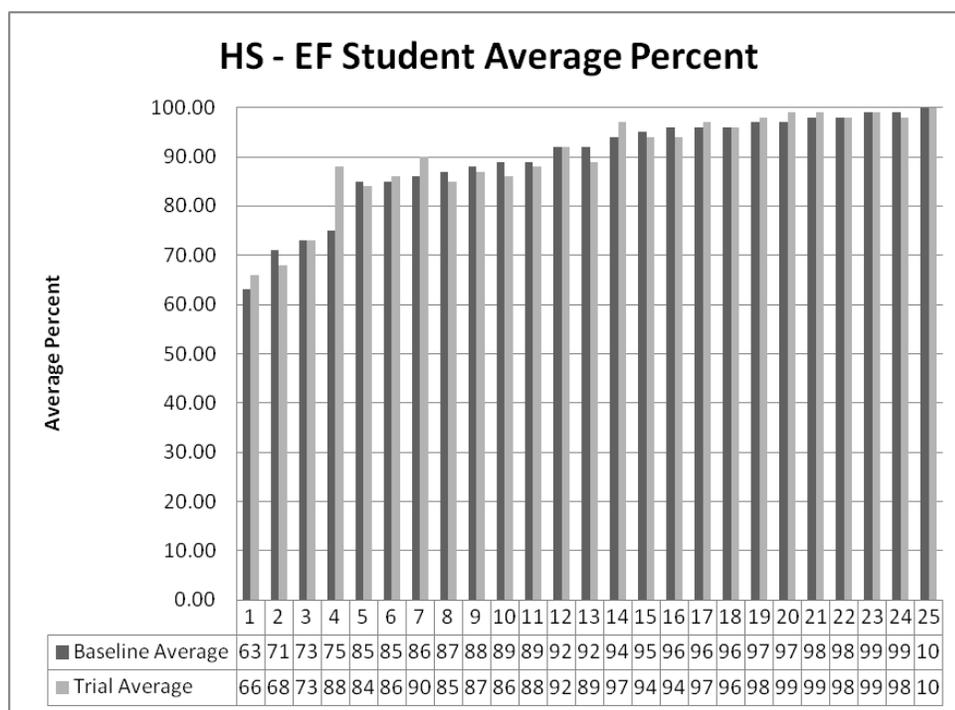


Figure 1 shows the average percent earned by each student during the baseline and trial period. The graph shows little change in average percents earned between the baseline and trial period.

Figure 2 - HS-CD Student Average Percent

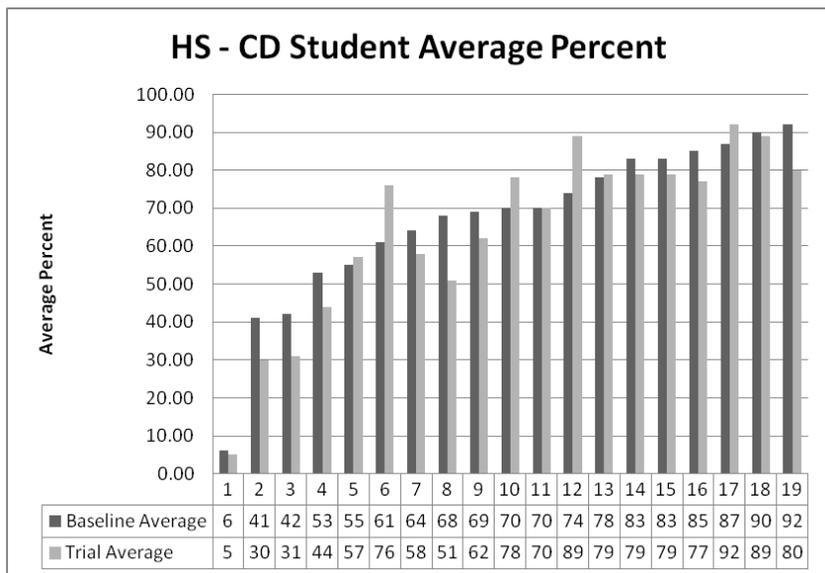


Figure 2 shows the average percent earned by each student during the baseline and trial period. The graph shows little change in average percents earned between the baseline and trial period.

Figure 3 - HS-EF and HS-CD Cluster Average Percent

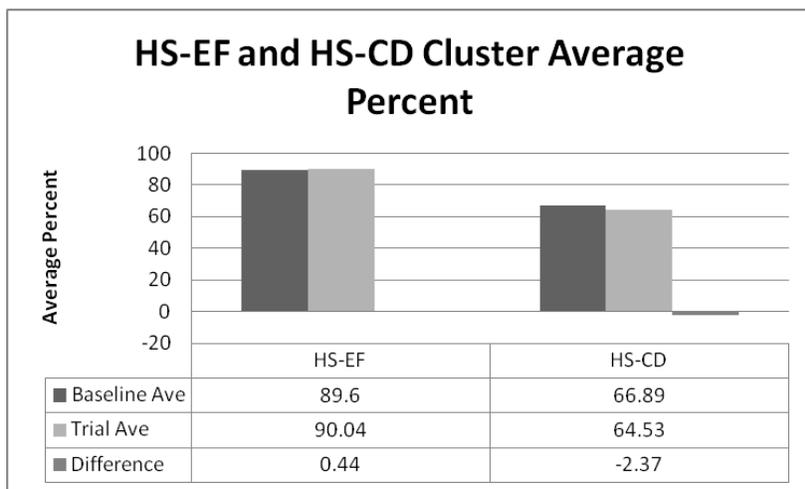


Figure 3 shows the average of the student percents earned for each cluster. The graph demonstrates that there was little difference between the baseline and trial period within the clusters, but a large difference between clusters.

MS Cluster Comparison

Both the MS-6&7 and the MS-8 graphs (see Figure 4 and Figure 5) show a similar trend of students who had a lower average percent during the baseline continuing to have a lower average percent during the trial period and students who had a high average percent during the baseline continuing to have a high average percent during the trial period. Unlike the high school, the MS-6&7 and MS-8 clusters did not have a large disparity between cluster average percents (see Figure 6). For the baseline period the MS-6&7 had a cluster average of 88% and the MS-8 had a cluster average of 92%. (see Figure 6). Both the MS-6&7 and MS-8 had a similarly high cluster average percent during the trial period (87.78% and 90.11% respectively). The cluster average percentages between baseline and the trial periods for both the MS-6&7 and MS-8 clusters decreased, but the MS-8 cluster saw a larger decrease (-1.89%) than the MS-6&7 cluster (-.22%).

Figure 4 - MS-6&7 Student Average Percent

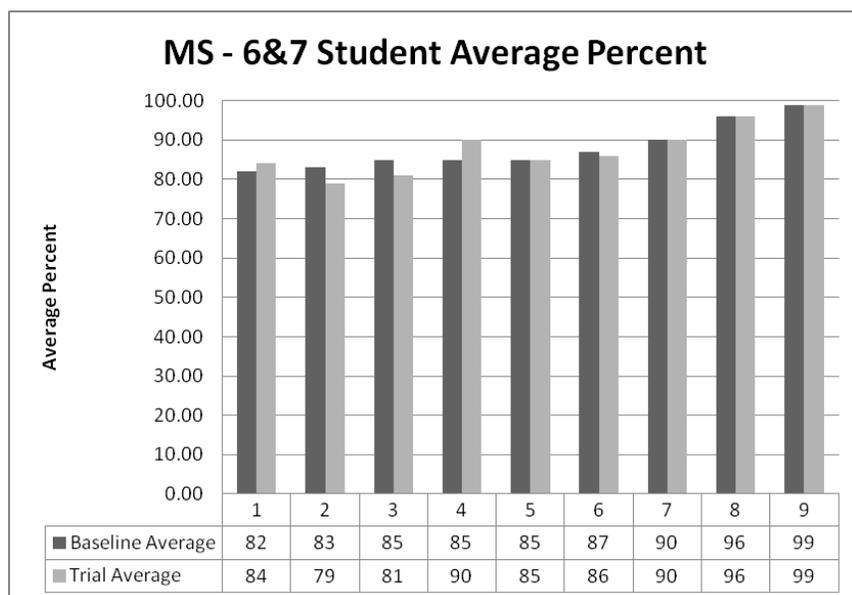


Figure 4 shows the average percent earned by each student during the baseline and trial period. The graph shows little change in average percents earned between the baseline and trial period.

Figure 5 - MS-8 Student Average Percent

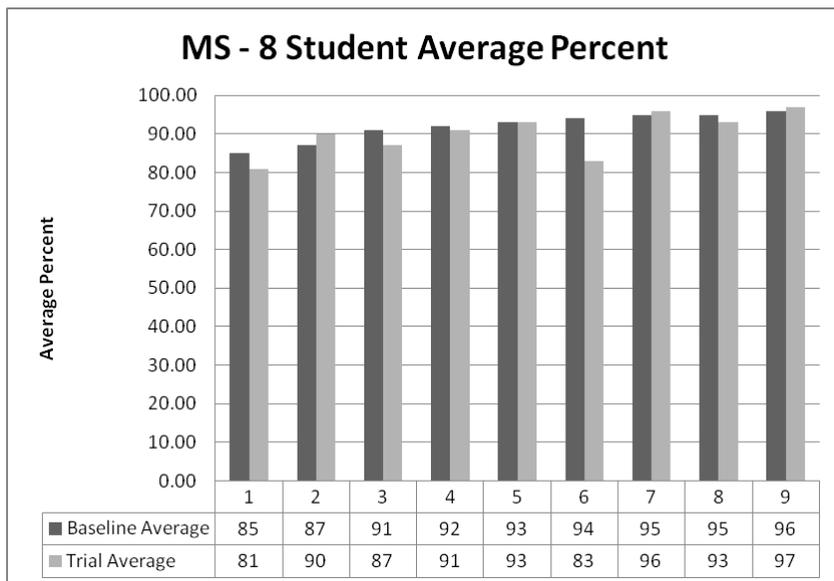


Figure 5 shows the average percent earned by each student during the baseline and trial period. The graph shows little change in average percents earned between the baseline and trial period.

Figure 6 - MS-6&7 and MS-8 Cluster Average Percent

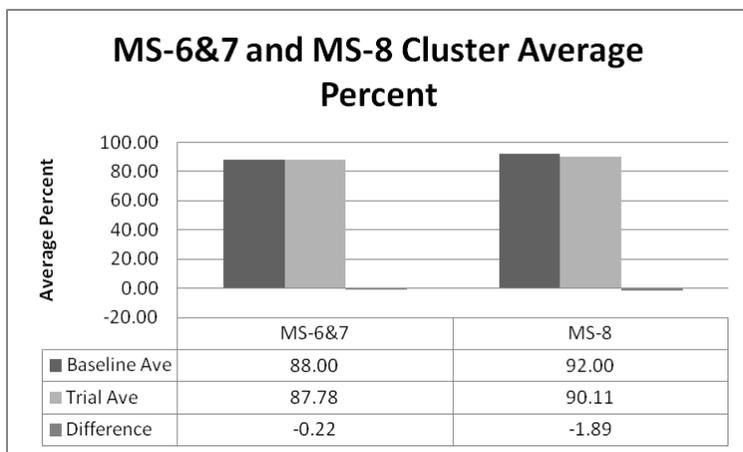


Figure 6 shows the average of the student percents earned for each cluster. The graph demonstrates that there was little difference between the baseline and trial period within and between the clusters.

Cluster Level Progression

The four groups included in this study progressed through the levels of Secret Student at differing rates (See Figure 7). The HS-CD cluster was unable to achieve the 2nd level. The HS-CD cluster's difficulty in achieving levels is reflective of the HS-CD student and cluster average percents. Both the MS-6&7 and the MS-8 clusters achieved similar levels (3rd and 4th level respectively). This conforms to the similarities found when comparing the MS-6&7 and MS-8 student and cluster average percents. The HS-EF cluster attained the highest level (5th level). The HS-EF's level progression is in accordance with the HS-EF student and cluster average percent. The level achievement of each cluster is consistent with their student and cluster average percents.

Figure 7 - Cluster Attempts Per Level

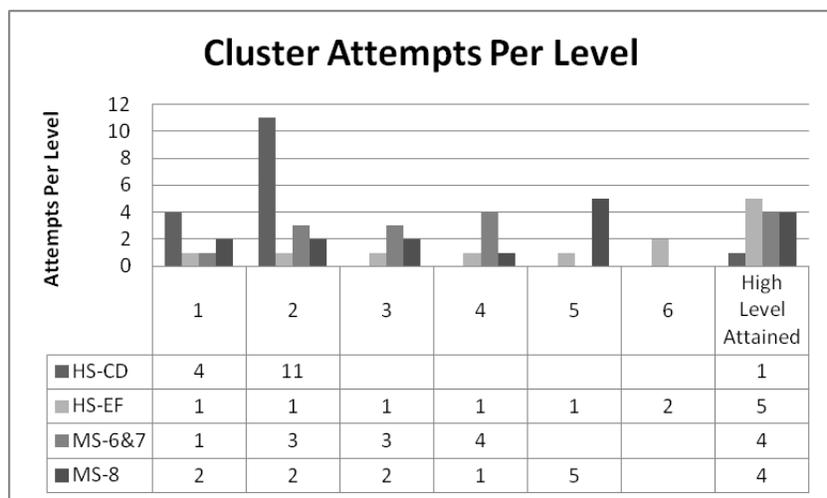


Figure 7 shows the number of attempts each cluster made for a level and the highest level attained. The graph demonstrates that each cluster's level progression is consistent with their respective student and cluster average percents.

Discussion

Secret Student did not have a notable impact on the student average percents. In all groups, the data did not show any real changes in the student average percents between the baseline and the trial period. There are many variables that affect the outcome of contingency systems within a school. Two variables that may have impacted the effectiveness of Secret Student in the population studied are group stability and strength of incentives. Although Secret Student did not appear to influence student behavior, changing student behavior is only one goal of a contingency system based on positive behavior supports. Cultivating students' positive connections to school is another goal of positive behavior supports.

The basic premise of an interdependent group-oriented contingency system is to create a goal that an entire group works toward. This is done in the hopes of creating group cohesion and peer regulation. For group cohesion to occur, the group's members have to be relatively stable over time. A high degree of immigration and emigration hinder the ability to form the necessary bonds to accomplish the goal of the behavior system. During the study, over half the population of the entire school changed. There were 138 students who attending the school during the study, 77 of those students either came in during the study, left before it ended, or were not present for a significant portion of the study. The number of days these excluded students attended the school varied; several students attended less than a week of school during the study period. In an attempt to obtain a better picture of the impact of Secret Student on student average percents, a second set of data was collected from a follow-up implementation of Secret Student. Unfortunately, it was not possible to include these data because over half of the students who were included in the study were not present in the second Secret Student implementation. This instability of the group could have diminished the impact of Secret Student.

Any contingency based system is only as good as its incentives. The incentives in the study were determined by each cluster's staff in order to customize the incentives for each specific group. But, the incentives were determined by staff based on their knowledge of the students. The incentives were also ranked based on the staff's opinion on the desirability of each incentive. Student input was not solicited when determining or ranking the incentives. If there was a disparity between the views of the staff and the views of the students, the incentives may not have been rewarding enough to create a change in behavior. Along those lines, incentives are not universal. They are also not of stable value over time or between individuals; something that is considered an incentive for an individual today may not be an incentive tomorrow, or be considered an incentive by another individual. Implementing a contingency system that attempts to create an incentive for a large number of individuals may not adequately account for all of the variables that affect the strength of an incentive, thus reducing the effect of the system.

When evaluating a contingency system based on positive behavior supports, there are other considerations to take into account when evaluating its effectiveness. The enhancement of student's quality of life needs to be considered (Carr et al. 2002). The effect the system has on students' attitudes towards school is an important reason to use positive behavior support systems. It may be the case that in a certain situation a punisher (e.g., denying access to activity to reduce an unwanted behavior) would be just as effective as a reinforcer (e.g. allowing access to an activity in order to increase a desired behavior). The question as to whether to reinforce a desired behavior to increase it or punish an unwanted behavior to diminish it can rest on the climate one wishes to create. Even if a contingency system does not directly increase the desired behavior, it can still be considered successful if it develops positive student attitudes toward school. Although this study did not assess a change in school climate, future studies should

include this aspect. This could be accomplished by having students complete a survey assessing student attitudes and feelings towards school before and after the implementation of Secret Student.

Two other factors may have affected the ability to generalize this study. The student percents earned were determined by several teachers. While the school trains teachers on how to use the point system, student scoring is not calibrated for reliability. Lack of calibration could skew student averages and render them unrepresentative of students' actual behavior. This study's outcome may also be limited due to the length of duration. The study only included Secret Student implementation for one semester of school. Considering this was the first group-oriented contingency system implemented at the school, Secret Student may take a more time to have a notable effect on student behavior. Further research may want to study the effects of Secret Student over a longer period of time.

The staff's reaction to Secret Student was, for the most part, positive. I observed an initial trepidation due to the reactionary belief that it would be more work for them. Collecting the data did not add extra responsibilities on staff because the school already collected the behavior data utilized in the study. The data collected were stored in a centrally located database available to all staff members. These two elements made it possible for Secret Student to be run by one individual (in this case the researcher) in roughly thirty minutes a day. Other than determining and delivering incentives, there was no additional work load. This lack of additional work for teachers made Secret Student a palatable endeavor to the staff. Though the implementation of Secret Student was not a concern for staff, there were some concerns voiced, which were also echoed in previous literature, about providing incentives to the students when staff didn't believe they deserved them. Some teachers did not like rewarding students who

didn't earn any points towards the group's incentive. Despite this concern, when asked, the staff felt that Secret Student should be implemented again the next school year.

Since the conclusion of this study in May, 2013, Secret Student continues to be implemented at the school. The PBIS committee made changes to the structure in hopes of making it more effective. Some of these changes include: adding more incentive levels; making the initial incentive levels easier to obtain; and encouraging students to read the Secret Student announcement each morning at school. As the administrator of Secret Student at this facility, I speak frequently with staff regarding their feelings and student comments regarding Secret Student. Overall the feedback remains overwhelmingly in favor of Secret Student, even if immediate changes in student behavior were not apparent.

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Table 1

Student Participants By Cluster

Cluster	Number of Students Attending Each Cluster	Number of Students Included in Study	Difference	Percent of Students Included in Study
HS-CD	57	19	-38	33.33%
HS-EF	38	24	-14	63.16%
MS-6&7	24	9	-15	37.50%
MS-8	19	9	-10	47.37%
Total	138	61	-77	44.20%

Table 2

Number of Secret Students Picked Per Cluster

Cluster	Number of Students Selected
HS-CD	3
HS-EF	3
MS-6&7	2
MS-8	2

Table 3

Secret Student Point Information

Level	Percent of Daily Point Sheet Points Needed to Earn a Secret Student Points	Number of Days to Earn Points	High School		Middle School		Percent of Secret Student Points Needed
			Possible	Needed	Possible	Needed	
1	95%	5	15	9	10	6	60%
2	95%	5	15	9	10	6	60%
3	95%	5	15	9	10	6	60%
4	95%	10	30	21	20	14	70%
5	95%	10	30	21	20	14	70%
6	95%	15	35	28	30	24	80%
Bonus		Reach Level 6	Reach Level 6		Reach Level 6		Reach Level 6

Table 4

Secret Student Level Rewards

Level	HS-CD	HS-EF	MS-6&7	MS-8
1	Hat/Hoodie Day	Pencils	Hat Day	Healthy Snack
2	Gym Time or Wii	Pens	Gym Time	Hat Afternoon
3	Computer/Class Game Time	Cookies	Game Time w/ Refreshment	Extended Lunch
4	Listen to Music During Independent Work	15 Minutes Free Time in Class	Airbrush Fabric (Student Makes Design)	Chips and Queso
5	Movie & Popcorn	Skip Assignment	Pizza Party	Basketball or Volleyball Tournament
6	Pool and Pizza Party	Gym Time	Cook Breakfast	Group Breakfast
Bonus	Off Campus Activity	Pizza Party	Sports Center	Swimming at Natatorium

Table 5

Dates Secret Student Was Implemented

Cluster	Secret Student Date	
	Beginning	End
HS-CD	2/4/2013	5/9/2013
HS-EF	2/4/2013	5/6/2013
MS-6&7	2/4/2013	5/10/2013
MS-8	2/4/2013	5/14/2013

Appendix A – Student Wage Sheet

<h1>STUDENT WAGE SHEET</h1>										G Y R 95% 80% x 2 x 1.5 x 1														
Name: <input style="width: 100%;" type="text"/>					Date: <input style="width: 100%;" type="text"/>					%	Deposit													
Cluster: <input style="width: 100%;" type="text"/>					PI: <input style="width: 100%;" type="text"/>																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Work Periods</th> <th style="width: 5%;">1</th> <th style="width: 5%;">2</th> <th style="width: 5%;">3</th> <th style="width: 5%;">4</th> <th style="width: 5%;">5</th> <th style="width: 5%;">6</th> <th style="width: 5%;">7</th> <th colspan="4"></th> </tr> </table>										Work Periods	1	2	3	4	5	6	7					Balanced		
Work Periods	1	2	3	4	5	6	7																	
Ready	Time	.05								Y	N													
	Self Starter	.05																						
Responsible	Work Continuity	.30								AM	Lunch	PM												
	Followed Directions	.30							.10			Total Daily Possible \$10.00												
Respectful	Manners	.30							.10															
	Managed Interactions	.30							.10															
Sub Total																								
Restroom																								
Appropriate Language																								
No Bullying																								
Hallway																								
Percentage										GRAND TOTAL														
Benchmarks	# 1 <input style="width: 100%;" type="text"/>																							
	1	/IOS	2	/IOS	3	/IOS	4	/IOS	5	/IOS	6	/IOS	7	/IOS										
	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A									
	# 2 <input style="width: 100%;" type="text"/>																							
	1	/IOS	2	/IOS	3	/IOS	4	/IOS	5	/IOS	6	/IOS	7	/IOS										
	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A									
	Bus Referral																							

Appendix B – School Wide Positive Behavior Incentive

School Wide Positive Behavior Incentives					
Incentives	CC Dollars	Coupons	Green	Yellow	Red
Use of the School Store (Green and Yellow) <ul style="list-style-type: none"> • 20 minutes of social time in the store • Video games, magazines, television available • Food and drink items available <ul style="list-style-type: none"> - Students may not bring any items from the store back to the cluster 	\$5.00 for yellow	0	Yes	Yes	No
Use of School Store (Green only) <ul style="list-style-type: none"> • Food and drink items available <ul style="list-style-type: none"> - Students may not bring any items from the store back to the cluster 	0	1 coupon per hour of attendance	Yes	No	No
Movie Time <ul style="list-style-type: none"> • Movie dates are on the calendar • Cost includes one popcorn, water and flavor packet • Additional popcorn and drinks may be purchased <ul style="list-style-type: none"> ○ 3 coupons for a water ○ 1 coupon for a flavor packet 	0	15	Yes	Yes	Yes
Wednesday Treat <ul style="list-style-type: none"> • Treats will vary each week 	0	3	Yes	No	No
Activity Hour <ul style="list-style-type: none"> • Wii • Xbox • Ping Pong • Weights 	0	15	Yes	Yes	Yes
Library Green Days	0	0	Yes	No	No

<ul style="list-style-type: none"> Dates will be determined by Library staff 					
Friday Lunch on the Patio <ul style="list-style-type: none"> Dates are on the calendar weather permitting 	0	0	Yes	No	No
Off Campus Lunch <ul style="list-style-type: none"> Must be a Sophomore, Junior or Senior Students need signed permission slip with a follow up phone call prior to going off campus 	0	Determined by cluster	Determined by cluster	Determined by cluster	Determined by cluster
Extra Slice of Pizza on Friday <ul style="list-style-type: none"> Third Friday of each month 	0	7	Yes	Yes	Yes