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Setting Events and Their Effects Upon Students' Behavior Goals

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SETTING EVENTS AND THEIR EFFECTS UPON STUDENTS' BEHAVIOR GOALS

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A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

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In Partial Fulfillment of

the Requirements for the Degree

Master of Science

in

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_____

by

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ABSTRACT

This study investigates the impacts that setting events have upon the behavioral outcomes of students on a Check-In, Check-Out (CICO) intervention. Research was conducted through participant interviews each day, which were then translated into quantitative graphs for data analysis. The analysis has shown that there is not a significant correlation between the setting events studied and student behavioral outcomes. Although it was not statistically significant, there appeared to be some degree of correlations. Quantitative data shows that the effects of setting events upon each individual student are varied, which allows us to conclude that the effects of setting events upon student behavior vary, and may be different from student to student. We conclude that though our research did not yield statistically significant results, setting events are an important area of research, and should continue to be investigated in relation to CICO and students' behavioral outcomes.

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CHAPTER ONE:

INTRODUCTION

Students experience a variety of events throughout their days. These experiences may or may not affect their academic and/or behavioral performance. These experiences are important for educators to identify and understand to allow for interventions to be implemented to mitigate the negative outcomes of these experiences, otherwise known as setting events. Though academic and behavioral performance are arguably equally important, students' behavioral outcomes have the ability to negatively impact their academic performance. Because of this, researchers have placed an emphasis upon students' behavioral outcomes and the circumstances that affect them. As researchers in this study, "Setting Events And Their Effects Upon Students' Behavior Goals" we continue this emphasis in students' behavioral outcomes, and the events and experiences that shape them. As educators, we have experiences in which students are affected by particular events that occur before the school day even begins. This has led us to begin questioning whether setting events, or experiences that students have prior to the beginning of the school day, have an impact upon students who have identified behavioral outcomes. This study particularly addresses the impact of setting events upon behavioral outcomes in a Check-in, Check-out (CICO) intervention. This highly researched intervention allows researchers to take an objective look into student behavioral outcomes. CICO provides educators with explicit data that allows them to look for

patterns of behavior throughout the day, week, month, etc. Because of its ability to provide explicit data on behavior, we have selected this intervention to measure the impact of setting events on student behavior. This study evaluates and utilizes student responses to questions regarding setting events to determine whether there is a correlation between these setting events and student behavioral outcomes (whether students meet their point goals or not).

CHAPTER TWO:

PURPOSE OF THE STUDY

This study asks the question, do setting events affect students' behavioral outcomes within the Check-in, Check-out intervention? In this study, setting events are defined as events that occur prior to students beginning their school day. The setting events in this study include whether students ate breakfast or not (eating habits), whether students had good sleep or not (sleeping habits), and whether they had a good morning prior to the start of their day (morning experiences). Prior to data collection and analysis, the primary researcher reviewed each of these categories and described the questions that will be prompted for students. Students were able to provide dichotomous answers to each of these questions. The primary researcher discussed eating habits, which was described as whether students ate breakfast or not. This includes either breakfast that was made for them at home, or breakfast obtained at school through the cafeteria. The primary researcher also reviewed the definition of "good sleep". They discussed that a good night's sleep is typically between 7-9 hours for children, discussing what a bedtime is that would allow students to have enough sleep each night. To clarify the understanding of a "good morning", the researcher discussed the definition with students. Students were instructed to respond depending upon their definition of a good morning. For example, if the student experienced a last minute schedule change that bothered them, they would indicate that they had a bad morning. Anything that negatively impacts

their mood would allow them to determine that they are not having a good morning. Behavioral outcomes are measured by students' achievement of their point totals on their CICO plan. For example, if a student's point goal is 5/7 points and they received 6/7 points for the day, they have achieved their behavioral goal. If they received 4/7 points, however, they have not achieved their behavioral goal. The Check-in, Check-out intervention in this study is the intervention in which students meet with a CICO program coordinator each morning and afternoon to discuss their goals for the day, and their achievement of these goals, respectively. The purpose of this study is to determine whether students' setting events and experiences prior to the start of the school day affect their behavioral outcomes of the day.

The primary researcher for this study elected to begin research in this area due to their experience as a paraprofessional. As a paraprofessional, they were tasked with becoming the CICO coordinator for an elementary school in southern California. While participating in this intervention, they began to notice patterns in student behavior. Some of these patterns included students not reaching behavior goals on particular days of the week, students not reaching goals when they had a substitute teacher, and not reaching goals when something has negatively impacted their mood and/or experience. After time, they also noticed that CICO worked for some students, but not others. This experience with the intervention prompted the primary researcher to dig deeper into the intervention of CICO and the effects that setting events have upon

student behavioral outcomes. The setting events investigated in this study were setting events that had been brought to the primary researcher's attention by students. Some students came into their check-ins complaining of a lack of eating breakfast, poor sleep, or a bad morning. Because of these complaints, the primary researcher determined that these setting events were important to investigate to understand how to best support students.

The goal of this research is to attempt to understand how and potentially why setting events impact students' behavioral goals. Understanding setting events and student experiences can allow educators to minimize the negative impact of these events and support students in their achievement of their behavioral goals.

Research Questions

This study asks the question, do setting events affect students' behavioral outcomes within the Check-in, Check-out intervention? What are the correlations between setting events and achievement of behavioral goals? Are these correlations patterned, or are they random? These are questions that are addressed within this study.

CHAPTER THREE:

LITERATURE REVIEW

Research on Check-in, Check-out and the effects of setting events have not been fully covered quite yet. To prepare for this study, we have researched both CICO and the effects that setting events, sleeping and eating habits have on student behavior. This has allowed us to gain some background knowledge that is pertinent to this study. To fully understand CICO and its methods, we began research on its implementation and background information. CICO is an empirically supported Tier 2 behavioral intervention. This intervention is dependent upon students' desire to interact positively with adults. According to Conley et. al (2019),"Increasing positive student-adult interactions has been linked to improved positive adult-child relationships and may lead to improved student engagement, attendance, and work completion". The CICO system allows students to receive feedback throughout the day, and ultimately allows them to engage with the adults around them in a positive, uplifting way. CICO begins with a daily check-in, in which students interact with the CICO coordinator (someone who is a role model for this student) and discuss how their day is going so far, along with any behavioral goals they are working on. At this time, the CICO coordinator can frontload the student with any important information that may potentially hinder their day (e.g. fire drill, substitute teacher, etc.). Throughout the day, students earn points from their teachers who are providing

consistent feedback regarding behavioral goals. At the end of the day, students check out with their CICO coordinator. The two discuss how the day went, any successes or struggles, and how to work toward their goals the next day. This intervention is best used with students who are struggling with classroom motivation, social skills, behavior, or classwork. It is imperative that these students seek and respond well to adult interaction. This ensures that they are motivated by these interactions to hold themselves accountable for their behavior. CICO has many positive benefits for the students that participate. It provides accountability, improves behavioral goals and structure, internalizes success and accomplishment, and engages the student in the school environment. This study countered previous findings that have suggested that there has been little support for the effectiveness of CICO for increasing appropriate behaviors. It is important to note, however, that each students' CICO should vary to benefit them. Research suggests that adaptations may be necessary to these systems based on each student's individual needs. According to Majeika et. al, their results showed that 71% of studies using CICO made adaptations to its core components. This indicates a need for individualization according to each student's unique behaviors. Majeika et. al (2020) provided an example describing how peer-mediated adaptation of CICO resulted in increased scores on sociometric ratings and consistently more points earned on the dynamic progress reporting for all students than during baseline. By differentiating and adapting CICO to fit each students' individual needs,

educators are able to address maladaptive or undesired behavior, and increase the probability of prosocial, or desired behaviors. This intervention is a great addition to a behavioral plan with students who qualify under the previously mentioned categories.From this research, we beg the question: What has an effect upon student behavior? How do these setting events and behavior affect their CICO plan? Further research into setting events will be able to explain student behavior, and how their lives and experiences at home impact this behavior.

Student behavior is influenced by many factors, some of which include setting events, eating and sleeping habits. To begin our research, we take a look at the effects sleeping habits have on student behavior. Sleep is important for our bodies to generate energy, maintain focus, and interact successfully with our environment. Lack of sleep tends to decrease these functions. Because of these reasons, it is highly important for students to receive an adequate amount of sleep each night. A study conducted by Ursache et. al (2021) shows that higher teacher-reported child sleepiness was associated with lower adaptive behaviors and higher problem behaviors in the classroom. This also predicated lower academic achievement. Additionally, the CDC (2023) states that children who do not get enough sleep are more likely to have attention and behavior problems, which can contribute to poor academic performance in school. This proves that less sleep is related to a larger amount of problem behaviors in the classroom. By examining students' sleep levels and their achievement of their behavioral

goals, we can understand a potential correlation between the two. The next factor this research seeks to address is the eating habits of students. According to a literature review done by Tam (2021), their research found that eating breakfast can increase cognitive capabilities in the learning process. On the other hand, skipping breakfast not only affected school performance, but also had an impact on student psychological and physical development. Not only does not eating before school affect academic performance, it affects psychological development as well. This development plays a major role in student behavior. Another study conducted by Liu et. al (2021) addressed the question of whether eating breakfast or extracurricular tutoring affected students' academic performance more. Their results showed that both breakfast and extracurricular tutoring can improve students' grades, and breakfast was superior to tutoring in efficacy. This reinforces the importance of eating breakfast prior to schooling for students. This research proves that eating breakfast is essential to students' academic and behavioral performance in school. The final factor this study seeks to address include setting events and their effects on behavior. In her research, Robertson et. al (2019) describes how some teachers may feel at a loss and out of control of their students' behaviors. They describe that one productive way of addressing out-of-school factors, and returning a sense of control over student behavior, is to view these events as "distal setting events".” They describe these events as factors to consider when student behavior changes. Conroy and Fox also address setting events in their research. They describe different ways to

incorporate these events into behavior plans because of their important role in student behavior. Upon further analysis of past research, our research thesis suggests that a combination of these setting events have a significant effect upon student behavior.

CHAPTER FOUR:

METHODS

Participants

Table 1
Participant Characteristics

Participant	Location	Grade	Length of Time in Program
1	Small Town (TK-6 elementary school)	1st	3 weeks
2	Small Town (TK-6 elementary school)	3rd	4 weeks
3	Small Town (TK-6 elementary school)	4th	2 weeks

Participants in this study included K-6 students from an elementary school in southern California. The students recruited in this study ranged from six years old to eleven years old. This was a convenience sample and parents/caregivers were given one week to review the study materials, ask questions, and return the informed consent form if they were willing for their child to participate. Participants in the study were included on a first-come basis, with a waitlist created for students, if more than three families agreed, using the waitlist if students drop out or are absent for at least five days. Students who had been

going through significant changes in the month prior to the study (i.e. medication change, change in foster care placement) were excluded from this study due to inconsistency in their primary living situation.

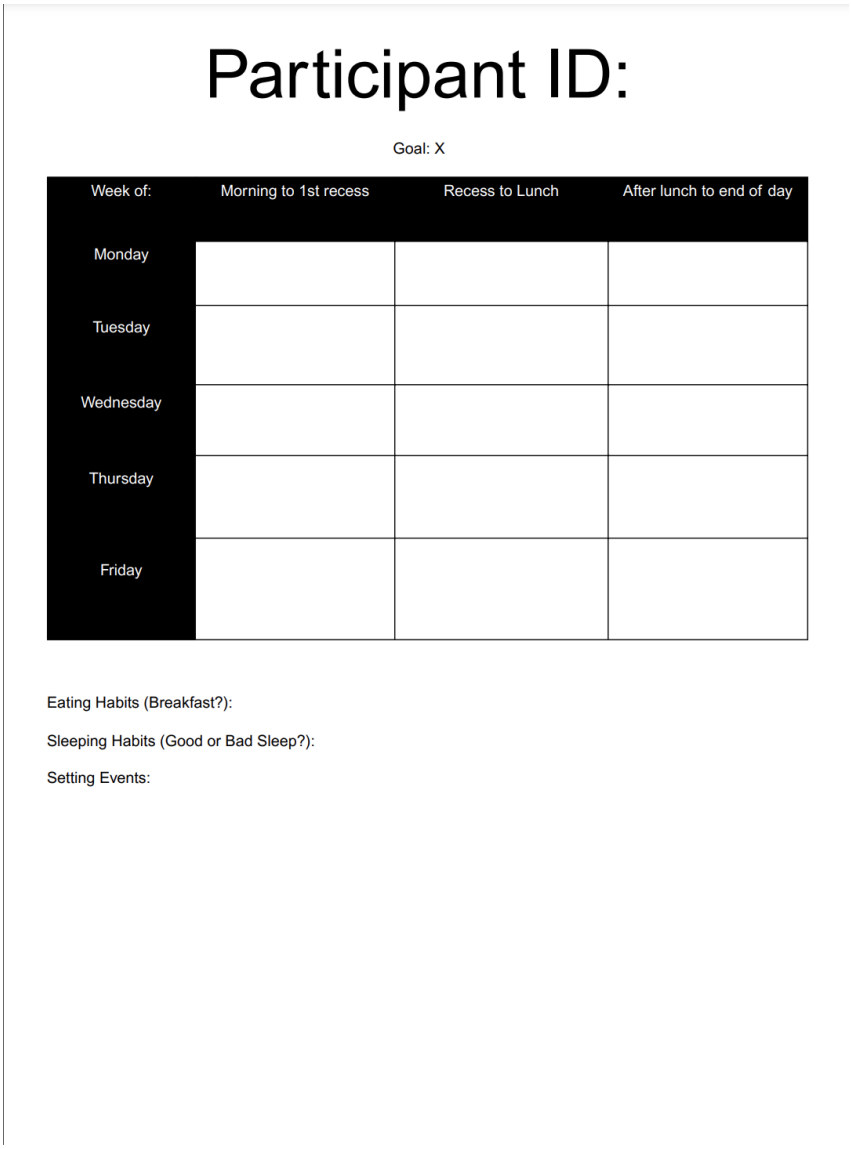
Following the disbursement of informed consent letters, six were returned signed with an indication of participation or nonparticipation. Participants were inducted into the study as the letters were returned, until three participants were recruited to the study. These participants (the students) were provided with a child assent form, which informed them of their participation in the study and explained their ability to drop out from the study at any point. This assent form was signed by the student and reviewed each week of the study.

Data Collection

This study first received IRB approval for implementation through California State University, San Bernardino. The key instrument utilized in this study includes a data tracking sheet. These data tracking sheets were prepared with each participant in mind. Each sheet differed to allow for the differentiated point goals and totals. The top part of each sheet was able to be filled with quantitative data, such as the points earned, while the bottom half allowed for qualitative data, including student interview responses. The simplest form of this data tracking sheet was created to allow for a clear and concise place to track the data of this study.

Figure 1

Check In Check Out Data Sheet



Participant ID:

Goal: X

Week of:	Morning to 1st recess	Recess to Lunch	After lunch to end of day
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			

Eating Habits (Breakfast?):

Sleeping Habits (Good or Bad Sleep?):

Setting Events:

This data tracking sheet has a place to indicate the dates for each day of the week. Each participant had a separate point goal to reach, as well as a different number of points possible. This difference in goals was due to each students' individual needs. Point goals were determined by age, grade-level, cognitive functioning, and success in the CICO program. For example, Participant 1 is a younger student who benefitted from having points given to them throughout the day in each block of their day. By only having the option of earning one point or not earning a point, the student was able to understand the expectations for them throughout the day. Participant 2, on the other hand, is an older student who is able to conceptualize earning up to 5 points across 4 blocks of the day. They had been doing CICO for a few weeks, and had been having more success, so their goal was bumped up from twelve to fifteen points. Participant 3 was new to the CICO system, and had not had much success yet, so their point goal was determined to be twelve. They were also an older student who was able to conceptualize having multiple blocks/periods of time throughout the day where they were able to earn up to five points (in each block).

This was differentiated on each data tracking sheet by providing a spot at the top of the Participant 1 was able to earn up to seven points, with a point goal of five. Participant 2 was able to earn up to twenty points, with a point goal of fifteen. Participant 3 was able to earn up to twenty points as well, but with a differing point goal of twelve. Each date of the week has a corresponding column in which a box can be marked to indicate whether the participant earned the point

or not. These points are then added together to determine the amount of points for that particular day. This can then be compared to the point goal to see if the participant achieved their goal for that day.

The bottom half of the data tracking sheet has a spot for each of the questions asked at the beginning of the day. These ask about whether they had eaten breakfast, if they had gotten sleep the night before, and if any events have taken place that may alter their day moving forward. These spots can be marked to indicate participant responses, along with any researcher notes regarding these responses.

Data was taken on a data tracking sheet for each student. We recorded their responses to each question in the morning. Because this data is already maintained for their CICO scores, it was continued.The data was analyzed at the end of the week, and compared against the responses to the questions regarding setting events.The daily CICO forms were collected with no name. Instead, a participant ID was provided to each student to be analyzed alongside the answers to their setting event questions.

Each student met with the researcher individually in an office where the researcher was able to ask them questions regarding their morning events, eating and sleeping habits. They were alone and had privacy when discussing these practices. After they indicated their responses to these questions, the researcher was able to record said responses. The student then took their CICO sheet to class and earned their points throughout the day. They then met back

with the researcher at the end of the day to review their scores for the day. The data taken included numerical data, as well as response data.

Data was taken and converted into numerical point values to allow for simpler data interpretation. In order to be able to interpret these findings, we assigned point values to each response to the research questions. For responses of “No” or “Bad”, the point value of 1 was assigned. For responses of “Yes” or “Good”, a point value of 2 was assigned. For N/A, which represents a day where the student was absent or there was no school, a point value of 0 was assigned. We then assigned point values to whether the student received their points for the day or not. If they did receive their points, the point value 2 was used. If they did not, they received a point value of 1. If the answer was N/A, they received a 0. Using these point values allowed us to interpret the data taken to find an average and a correlation coefficient.

Data Analysis

This data was then simplified and ran through a formula to determine mode, mean, and correlations between the points earned and whether they positively achieved the setting event (e.g. eating breakfast) to interpret the results. Each category was simplified into numerical form to allow for calculations to be made. Because each response was qualitative, this data was simplified into a dichotomous numerical variable. Each response of Yes/Good was assigned a point value of 2. Each response of No/Bad was assigned a point value of 1.

Responses that were N/A (the student was absent or there was no school) were assigned a point value of 0. After this data was simplified into numerical form, the mode and mean were found in each participants' data. We then looked for correlations between points earned and the three setting events.

The data was overall found to be statistically insignificant. To determine whether a category was correlated to the behavioral outcomes, we examined the correlation number. It is known that the relationship between two variables is generally considered strong when their correlation is larger than 0.7. Upon reflection of our data, it is evident that none of the correlations are larger than 0.7. The strongest correlation between two categories is found in Participant 1's data correlation between the "Morning" category and student behavioral outcomes. This correlation is 0.56. Each other correlation was too low to be statistically significant. One of the outcomes exemplified a negative correlation, which was statistically insignificant, but different from each other correlation found within this study.

CHAPTER FIVE:

RESULTS

The research conducted in this study sought to answer the question of whether eating and sleeping habits, or setting events impact a student's ability to achieve their behavioral goals in a CICO system. To do so, we conducted research by asking students about each of their categories at the beginning of the day during their check-in. They were asked whether they ate or not, whether they had a good sleep the night before or not, and how their morning was going so far (good or bad). This data was then written down and at the end of the day, their points were calculated, determining whether they met their goal or not. For example, if the student received 4/7 of their points (receiving a percentage of 57%), they did not meet their goal of 5/7 points. Upon this data collection, we were able to compile four weeks' worth of data. This data was then interpreted to understand our findings.

Table 2

Data Taken for Participant 1

Participant 1:
Week 1

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
57%	Yes	Yes	Bad
42%	No	No	Bad
100%	No	No	Good
71%	No	Yes	Good
86%	No	Yes	Good

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
71%	No	Yes	Good
100%	No	Yes	Good
100%	Yes	Yes	Good
0	0	0	0
100%	No	Yes	Good

Participant 1:
Week 3

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
0	0	0	0
100%	No	Yes	Good
57%	No	Yes	Good

86%	Yes	Yes	Good
57%	No	Yes	Good

Participant 1:
Week 4

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
86%	No	Yes	Good
100%	No	No	Good
57%	No	No	Good
100%	No	Yes	Good
0	0	0	0

Table 3

Data Taken for Participant 2

Participant 2:
Week 1

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
60%	Yes	No	Good
100%	No	No	Bad
75%	Yes	Yes	Good
80%	No	No	Bad
0	0	0	0

Participant 2:
Week 2

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
0	0	0	0
90%	Yes	Yes	Good
90%	Yes	Yes	Bad
0	0	0	0
65%	Yes	Yes	Bad

Participant 2:
Week 3

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
0	0	0	0
85%	Yes	Yes	Good
70%	Yes	Yes	Good
100%	Yes	Yes	Good
60%	Yes	Yes	Good

Participant 2:
Week 4

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
85%	Yes	Yes	Good
80%	Yes	Yes	Good
100%	No	Yes	Good
85%	No	Yes	Good
0	0	0	0

Table 4

Data Taken for Participant 3

Participant 3: Week 1			
Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
50%	Yes	Yes	Bad
45%	Yes	Yes	Good
60%	Yes	Yes	Bad
45%	Yes	Yes	Good
55%	Yes	Yes	Good
Participant 3: Week 2			
Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
60%	Yes	Yes	Good
60%	Yes	Yes	Good
60%	Yes	Yes	Good
0	0	0	0
60%	Yes	Yes	Good
Participant 3: Week 3			
Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
0	0	0	0

25%	Yes	Yes	Bad
40%	Yes	Yes	Bad
35%	Yes	Yes	Good
60%	Yes	Yes	Good

Participant 3:
Week 4

Percentage of Points	Did they eat breakfast?	Did they sleep well?	How did their morning start?
40%	No	Yes	Bad
0	0	0	0
35%	No	No	Good
15%	No	Yes	Good
0	0	0	0

Table 5

Participant 1 Data Simplified

	Points	Breakfast	Sleep	Morning
Mode	2	1	2	2
Mean/Average	1.722222222	1.166666667	1.722222222	1.888888889
Correlation		-0.03984095364	0.4333333333	0.5656854249

Table 6

Participant 2 Data Simplified

	Points	Breakfast	Sleep	Morning
Mode	2	2	2	2
Mean/Average	1.733333333	1.733333333	1.8	1.733333333
Correlation		-0.3636363636	0.4522670169	0.4522670169

Table 7

Participant 3 Data Simplified

	Points	Breakfast	Sleep	Morning
Mode	1	2	2	2
Mean/Average	1.375	1.8125	1.9375	1.6875
Correlation		0.3721042038	0.2	0.2437087183

Given this sample size, we understand and acknowledge that statistical analysis may not be practical, but we found it important to share our findings.

Interpreting this data allows us to understand the patterns that are found in each participant's individual responses. The three categories studied include the mode, average, and correlation. To answer the research question of whether eating/sleeping habits and setting events affect a students' ability to achieve their behavioral goal in a CICO, we must take a look at each of these categories for each participant, specifically the category of correlation.

The mode in each of Participant 1's categories varied. While they mostly earned their points, had good sleep, as well as a good morning, they did not eat

breakfast most of the time. The average of each of these categories matches this, showing that their highest average was in the “Morning” category, while their lowest average was in the “Breakfast” category. The correlation category shows whether Participant 1’s behavior was correlated to the setting events of breakfast, sleep, and morning experiences. It is known that the relationship between two variables is generally considered strong when their r value or correlation is larger than 0.7. Our research shows that none of these categories proved to be significantly correlated to the “Points” category. This means that none of these categories had a strong effect on whether the student reached their behavioral goal or not. The strongest correlation of these is the correlation between the setting events in the morning and the point goal. The correlation in this category is the highest in the study, with a number of 0.5656854249. Though it is not statistically significant, it is the greatest correlation found in this study. This shows that these three categories were not significantly correlated to Participant 1’s behavioral outcomes during the day.

Participant 2 showed no variation among their modes in each category. The mode in each is 2, which means that they mostly received their points, ate breakfast, had a positive morning, and had good sleep the night before. The same similarities are seen in the averages for each of these categories. For points, breakfast, and morning, the average was 1.733, while the sleep category showed a slightly higher average of 1.8. The correlations for sleep and morning

setting events are the same, showing a nonsignificant statistical correlation. The category of breakfast, however, has a negative correlation.

Participant 3's data demonstrated a variation in mode in the Points category. Their mode for each other category was 2, but the mode for this category was 1. This means that they mostly ate breakfast, had a good morning, and had good sleep. They did not, however, receive their points most of the time. The averages reflect this, with an average of 1.375 for "Points", 1.81 for the "Breakfast" category, 1.94 for the "Sleep" category, and 1.69 for the "Morning" category. The correlation category shows whether Participant 3 was affected by the setting events of breakfast, sleep, and morning experiences. Though not statistically significant, the correlation between the "Breakfast" category and behavioral outcomes (point totals), with a correlation of 0.37. The other two correlations in the categories of "Sleep" and "Morning" were not statistically significant either, with a correlation score of 0.2 and 0.24, respectively. Though these correlations are not statistically significant, we have gained insight into setting events and their relation to behavioral goals, and encourage future research to continue investigating the matter.

Modes

The modes of each category show which response was the most selected. For example, Participant 1 had a mode of 2 in the categories of points, sleep,

and mornings. This means that the response to each of these categories was mostly that they earned their points, slept well, and did not experience any negative setting events prior to their check-in. In the category of breakfast, however, the mode was 1. This means that for the majority of the responses, the participant responded that they did not eat breakfast in the morning. This demonstrates that this participant reached their behavioral goals, had good sleep the night before, and did not experience negative setting events prior to check in most of the time. It also indicates that this participant did not eat breakfast most of the time, but that didn't impact the student's point totals. Through understanding these factors and how this individual participant responded, we can support this student in the categories they fell short in. In this case, that category is the breakfast category. Though it may not have a significant statistical correlation to whether the student earned their points or not, eating breakfast in the morning is important to a child's development, which is something educators care about. This data can potentially be used to support the student in obtaining breakfast, which could be something as simple as escorting them to the cafeteria to receive free breakfast.

Participant 2's data demonstrates that they received a mode of 2 in each category. This means that they received their points most of the time, and responded that they had eaten breakfast, had good sleep, and did not experience negative setting events before their check in most of the time. Interpreting this data may lead us to re-evaluate whether this student should

remain on a CICO if they are receiving their points most of the time. It is important to note that this student is responding in a way that indicates that they may not require support in the areas of breakfast, sleep, and setting events in the morning.

Participant 3's data shows that they received a mode of 2 in all categories except for the points category. This means that they ate breakfast, had good sleep, and did not experience negative setting events prior to their check in most of the time. They did not, however, receive their points most of the time. This leads us to consider different factors that may have an influence on this student's achievement of their behavioral goals. It seems as though they are not earning their points, despite having success in all other categories. Future research may lead us to determine what these factors are, and how they can be mitigated to support this student in the future.

Averages

The averages of each category support and elaborate on the mode of each category. We know the modes of each of these categories, but the averages can allow us to determine which way the mode was leaning. Participant 1 received an average of 1.722 in the points and sleep categories, indicating that they were on the higher end of the scale in these two categories. They also received an average of 1.88 in the category of setting events, which leads us to understand that they received higher numbers of positive responses in this

category. On the other hand, in the category of breakfast, they received an average of 1.166. This is on the lower side of the category, which supports the data indicating a mode of 1 for this category. To reiterate, though this may not be statistically significant in this study, this is definitely an area that needs improvement for this individual student.

Participant 2 received an average of 1.733 in the categories of breakfast, points earned, and setting events. They received a slightly higher average in the category of sleep, with an average of 1.8. This shows that the student is averaging similar numbers among all categories, indicating that they may not need support in these categories, the most significant of these categories being the points category. If this student is consistently receiving their points for the week, it would be important to suggest either raising the threshold and criteria for success, or deciding if the CICO has worked for this student so they may be phased off of it. This data suggests that these are ideas that should be discussed and potentially implemented with the student.

The averages in Participant 3's responses vary. They received higher averages in the categories of breakfast, sleep and setting events, with averages of 1.8125, 1.9375, and 1.6875 respectively. Their average in the area of points earned is significantly lower than these averages, at 1.375. Knowing that this average is so low in comparison to all other averages, it is important to ask the question: Is this support aiding the student in achieving behavior goals? Because this student is consistently not earning their points, evaluating the success of this

intervention is pertinent. If the intervention is not supporting the student, educators must take a look into what interventions would support this student in their goals. It is also important to question whether there are other factors preventing this student from being successful that are not measured in this study.

The averages of each participant's responses in this study allow us to understand the individual responses of each student. Interpreting this data can allow us to determine which area students may require more support in, and evaluate whether this intervention is working for them or not.

Correlations

The most significant data in this study lies within the correlations found between the sleep, breakfast, and setting events categories. This study sought to answer whether these factors influence students' success in achieving their behavioral goals in the CICO intervention. A correlation with a correlation coefficient of 1.0 indicates a positive correlation between two factors, and a correlation coefficient of -1.0 indicates a negative correlation between two factors.

The correlations in Participant 1's data show that there was not a significant correlation between any of the factors studied and their behavioral outcomes. The highest of these correlations is 0.57, in the category of setting events. This is on the stronger side of positive correlations, and indicates that this may be an area of concern for this particular student. The sleep category, with a

correlation of 0.433 demonstrates a moderate positive correlation, while the category of breakfast shows a weak negative correlation with a coefficient of -0.04. Data from Participant 1's responses indicate that the category of setting events deserves further research. This is the strongest correlation that we see in this participant's data, indicating that the category of setting events had the strongest positive correlation for this participant. Further research into this area may lead future researchers to understand the cause of these setting events, and why they impacted this student's ability to achieve their behavioral goals.

Correlations in Participant 2's data show similar results to the outcomes in the data for Participant 1. Participant 2 received moderate positive correlations in the categories of sleep and setting events, with a correlation coefficient of 0.45. This indicates that these categories were similarly correlated with the achievement of this student's behavioral goals. The category of breakfast, however, exemplifies a weaker negative correlation, with a correlation coefficient of -0.36. This figure is similar to the correlation between breakfast and points in the data of Participant 1. This leads us to question why there is a weak negative correlation between the two in each participants' data. Participant 1 and 2 share similar correlation data, but the same can not be said for Participant 3.

Interpretation of Participant 3's data shows weak correlations across all categories. The strongest of these correlations is found in the breakfast category, with a correlation coefficient of 0.37, which is still considered a weak/moderate positive correlation. The correlations in the categories of sleep and setting events

are also low, with coefficients of 0.2 and 0.24, respectively. This indicates that these factors are not correlated with this particular student's achievement of their behavioral goals on a CICO intervention. When compared to the previous data found in the mode and average categories for this student, these results make sense. The student seems to be able to succeed in all categories, except the points category. Upon interpreting this data, educators must evaluate whether this intervention is working for this particular student, and if not, how they can best support this student so they have the best chance at success in their behavioral goals.

The data taken during this study is able to show a few things about the participants and their use of a CICO system. It is true that there was a moderate correlation between the setting events in the morning and the achievement of behavioral goals for Participant 1. Other than this moderate correlation, however, there is a lower statistically insignificant correlation between each setting event and the behavioral goals of the students. The modes and means of each category demonstrate something different for each participant. Participant 1 generally earned most of their points, had good sleep, and experienced positive setting events in the morning. They did not, however, eat breakfast most of the time. Participant 2 earned their points, ate breakfast, had good sleep, and experienced positive setting events prior to check in most of the time. They seem to be benefiting from this intervention, and further steps could possibly be taken to phase them out of the program. Participant 3, on the other hand, ate breakfast,

had good sleep, and experienced positive setting events prior to their check in most of the time. They did not, however, receive their points most of the time. This points to other factors that may be affecting this student and their acquisition of their behavioral goals. The CICO system, as a whole, is an intervention that should be evaluated to hold educators accountable in their support of students who are on a behavior plan. In the case of these students, two have shown that they consistently meet their goals, while one shows that they have not been able to meet these goals. Our data points to an inconsistency in achievement for this student in particular. The data also demonstrates that Participant 1 is not consistently eating breakfast. Though this is not directly correlated to their achievement of their behavioral goals, it is still important to educators that students are receiving proper nutrition prior to their schooling. Eating breakfast in the morning improves memory and attention, which are important factors to aid students in their learning. The data taken in this study may not support our hypothesis that setting events have an impact on students' achievement of behavioral goals, but it does provide us with information that is important to understand when working with students on a CICO system.

While the data found in this study does not directly support the claim that factors such as eating/sleeping habits and setting events influence student achievement of behavioral goals, it provides some insight to researchers. From this insight, we are able to suggest future directions for research similar to this.

CHAPTER SIX:

DISCUSSION

The purpose of this study was to determine whether eating/sleeping habits and setting events have an affect on a student's ability to achieve their behavioral goals. Understanding these effects could potentially allow educators to mitigate these circumstances to support students in their behavioral goals. To understand these, we must break down each Participant's data to determine any significant statistical patterns. This study sought to understand the effects of setting events on students' behavioral goals on a CICO. Through data collection and further analyzation of this data, it is evident that there was not a significant effect from setting events on the behavioral outcomes of the the students in this data set. Our ideology behind this study is that students' at-home experiences and environments have an impact on their behavior throughout the day. The setting events of eating habits, sleep habits, and experiences in the morning before the start of school were the most important for this study to address. We understand that behavior varies from student-to-student, and the same can be said for the effect of setting events upon their day. Educators understand that one student may not eat breakfast in the morning, which may send them on a downward spiral for the rest of the day. Though these are the results of this study, we suggest future research to take another look into setting events and their effects upon students' behavior outcomes.

We must now look into the effects of differing setting events on a variety of students. What may affect one, may not affect all. Though this study did not find a significant effect of setting events, each students' varied, as did their behavioral outcomes. For example, one student exemplified a higher correlation between their morning and their behavioral outcomes. Another student, on the other hand, exemplified a greater correlation between breakfast and their behavioral outcomes. Selecting varying setting events and studying a large group of children may yield the results that we suggest are true; that setting events affect students' behavioral outcomes.

This study has opened the door for future researchers to take a look into the effects of a variety of setting events upon student behavior outcomes. We have suggested a variety of setting events that may be studied in the future. The outcome of this study has not proven that these particular setting events have a significant impact on these particular students, however, this research can be replicated to address a larger group of students, taking a look into other setting events. We have provided a guide to implementation of CICO, along with strategies to utilize when researching setting events and their effects upon students' behavior. This allows future researchers to insert their ideas into our framework to push forward their own research.

Limitations

This study faced limitations that may have had influence over the outcome of this study. One of these limitations included the convenience sample within the study. For the purpose of this research, students were selected from a southern California school. In order to be considered for the study, parental consent and student assent was attained. Nonparticipation was selected for many students in this small group. This limited the amount of students that were able to be involved in the study. Students were also selected from a small group of students on a Check-In, Check-Out intervention. This was another factor that contributed to the small sample size. Further limitations to this study included the limited weeks of data collection. Due to the length of the school year, including breaks such as spring break, field trips, holiday weekends, and summer break, the amount of time for data collection was limited. Each student on a CICO plan is held on the plan for no longer than a school year, limiting this study to one school year for the sample group.

This study was also unable to address the effectiveness of CICO on this group of students. Though these students had been recommended for this intervention, it is unclear whether these recommendations were based upon an FBA that determined the function of each student's behavior. If the CICO intervention was ineffective for these students, the outcomes of this study may have been skewed. Though these are some of the limitations of this study, it is able to be repeated/re-investigated by other researchers to determine the

effectiveness of CICO for students, as well as the potential effects of setting events upon behavioral outcomes/CICO interventions.

Future Directions

The data found in this research demonstrates that these setting events do not have a strong correlation to the outcome of students' behavioral goals. Because of this, we suggest further research into other setting events that may influence students' achievement of their behavioral goals. Some other factors that may be studied in future research include students' overall eating habits (healthy vs. unhealthy food), students' caregiver support, and general stressful events or ACEs. ACEs are adverse childhood experiences that occur in childhood (typically from ages 0-17). Examples of these include experiencing violence, abuse or neglect, witnessing violence in the home and community, or having a family attempt or die by suicide. There are also aspects of the child's environment that can undermine their sense of safety, stability, and bonding that can be considered ACEs. These are all categories that deserve further research to determine whether their behavioral goals are influenced by these outside factors.

CHAPTER SEVEN:

GUIDE FOR FUTURE RESEARCH ON THE CICO SYSTEM

CICO System Overview

This intervention works best with students who seek positive adult attention, because the intervention itself provides one-on-one attention and support. To determine whether this is the correct intervention for students, it is important to conduct a functional behavioral assessment (FBA). FBAs operate on the idea that all behavior serves as a means of communication. The four functions of behavior include sensory, escape, attention, and tangible. For the purpose of this study, we focus on the function of behavior known as attention. Maggin et al. (2015) and Wolfe et al. (2016) note that CICO was less effective or ineffective for students whose problem behavior was maintained by a function other than attention. The intervention of CICO allows educators to address this function of behavior. The intervention provides students with positive attention each day, which is meant to reduce attention-seeking behaviors in the classroom. This attention is provided each morning at the check-in, and each afternoon at check-out. Having a support person (CICO coordinator) at school also allows students to further their network of support. If a student's function of behavior is not attention, but rather sensory, this intervention will not be meaningful. The other functions of behavior, tangible and escape, must also be addressed through a different intervention. This is a Tier 2 behavioral support, which targets students who are struggling with behavior. The goal of this

intervention is to support students to bring them back to Tier 1. A CICO system of support should incorporate the PBS skills and standards that each student needs to work on. Each morning, students should check in with a designated person. This person should be someone that the students like and can relate to. They should be able to inspire and connect with the student targeted for this intervention. A time and place must then be set for the CICO. Students should meet with the same person, around the same time, and in the same place every day. This will allow them to form a routine around this intervention, as to not disrupt their typical learning routine. There should be a piece of time carved out each day for morning check-ins to ensure they are not rushed. Teachers should be informed of this intervention so they are able to fill out the student's CICO sheet and support them in the implementation of this intervention to the best of their ability. Research supports the implementation of CICO and its benefits. While it is important to stick to the key components found in a typical CICO, differentiation will allow for individual success among a range of students with different behaviors.

As mentioned previously, CICO is a Tier 2 support. It should be used when:

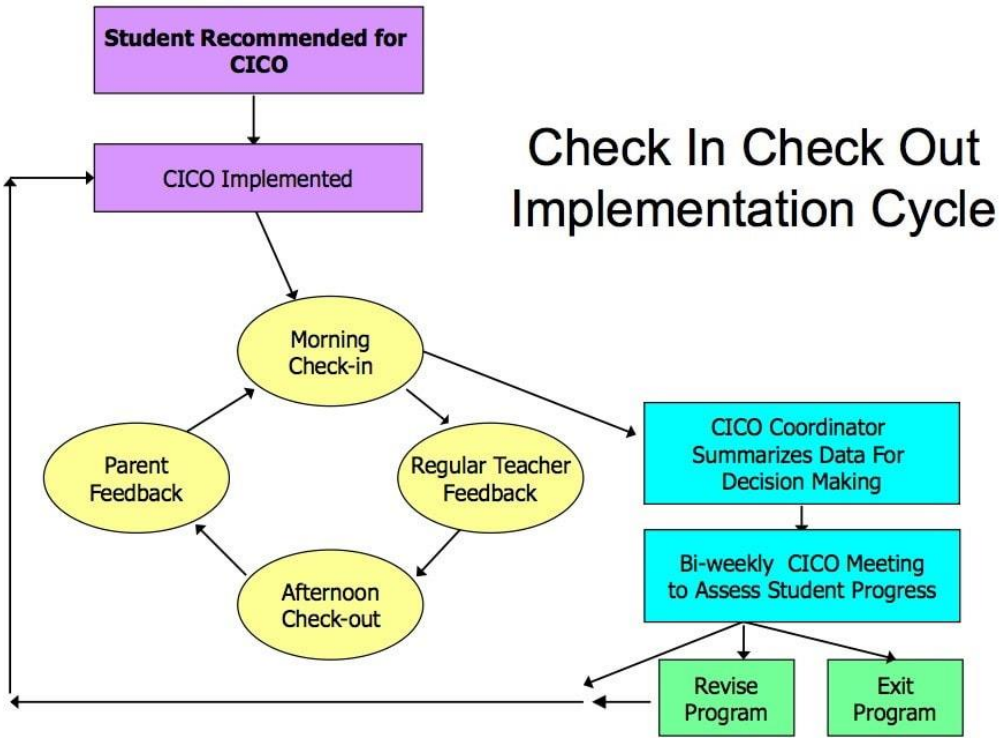
> The student is struggling with Tier 1 support. The student demonstrates little to no participation in the classroom. The student struggles with regulating their emotions or staying on task. The student's homework

submission is infrequent. The student is struggling with following school-wide PBIS skills and expectations.

Note: This intervention works best for children who respond well to positive interactions with adults.

Figure 2

Check In Check Out Implementation Cycle



Student CICO Sheets

The following categories should be included on students' CICO Sheets:

- Dates: Dates need to be included so you may keep data and track student progress.
- Point Goals: The student should have a goal for the number of points earned. This may be whatever number works best for you. For example, if there are 4 slots, they may earn 5 points per slot for a total of 20 points. Their goal could be 15.

- What They are Working for: Include what the student earns when this goal is reached. This could be a phone call home, a small prize, a token for class, or whatever is agreed upon by the team.
- CICO Goals: What behaviors is the student working to improve upon? Include their goals on their CICO sheet, so they have a constant reminder of how they earn their points each day. Keep it simple and concise. 3-4 goals should be enough.
- Fun Things: Let students personalize their CICO sheets. This allows them to take in the process and get excited about the CICO system. Let them pick colors or pictures to include on their sheet.

It is important to note that the grade/age of students may influence how their CICO looks and works. For students in TK/K, it may be important to check in multiple times each day, to account for their long school days at a young age. They may also be working for smiley faces instead of points in numerical form. This is more understandable for students of this age. For students in grades 1st-3rd, they may have their day separated into sections with easily understood point values to work for. The separation of their day allows the student to understand how their points are earned and when. A similar setup may be used for students in 4th-6th grade. These students may be able to understand their point systems better than younger students, so a more complex system may be set up. Differentiating individual students' CICOs can allow for better outcomes.

Check In

Each morning, the student on the CICO should report to the office for their daily check-in with the CICO coordinator. During this time, the coordinator should connect with the student, and point out their goals for the week. They should discuss how the student can earn their points, and how many points they need to reach their goal. During this time, the coordinator should ask the student any questions regarding setting events that may be affecting their achievement of behavioral goals. For our research, this is the time that we recorded data for student responses to questions regarding setting events. After a brief check-in, the student should take their paper back to class to give to their teacher to fill out.

During the Day

During the day, students should be receiving points based on their achievement of their behavioral goals. There should be slots for each major segment of the day to account for all time spent at school for the student. Differences in schedules should be accounted for, such as a student going to the Learning Center during the day. If the student is struggling at recess time, a block of time for recess may be added to account for this time. The teacher should provide suggestions based on their schedule to segment the student's CICO sheet into time chunks. By filling out their point charts, the teacher is able to communicate to the CICO coordinator how the student is achieving their behavioral goals.

Check Out

At the time of the students' check outs, the CICO coordinator should be in their usual meeting spot. There should be time allowed during this time of day to account for check-outs, to ensure that they are not rushed. At this time, students leave their class to meet with the coordinator. Together, they review their points for the day, and discuss any notes left by the teacher regarding their behavior. The coordinator and the student should count the points up together to determine whether the student receives a prize. At this time, data should be taken to indicate the students' point totals and their percentage of points earned. This is how their behavioral goal data is able to be measured in a study.

Rewards

To ensure that the CICO system is effective, it is important to provide students with rewards that are of value to them. The CICO system is mostly supportive by providing students with accountability and positive staff interactions, however, it also provides students with some extrinsic motivation in the form of prizes. This is something that must be individualized for each student. Prizes may include small toys, books, or items that the student enjoys. These prizes do not always need to be tangible. Some students enjoy particular activities, such as helping out younger students in another class, or participating in a particular activity. The CICO system relies on providing students with motivation to meet their behavioral goals during the day. By providing students

with something that they enjoy as a prize, we are able to better their chances of success in their behavior goals.

An important part of the CICO system includes the type of prizes that are offered to students. It is important to ensure that the reward is worth the effort to behave throughout the day. Prizes may range from tangible items, such as fidget toys, slime, and other small toys. They may also be timed experiences that are facilitated by the CICO coordinator or the student's general education teacher. This can include having extra free time, spending time helping in another classroom, or the ability to spend time completing a preferred activity with a staff member. Older students may be permitted to bank things for a bigger prize, like in a token/activity economy system. They may be required to earn their goal for three days in order to complete a preferred activity on the fourth day. As mentioned previously, prizes must be worthwhile and meaningful to the student on the CICO support.

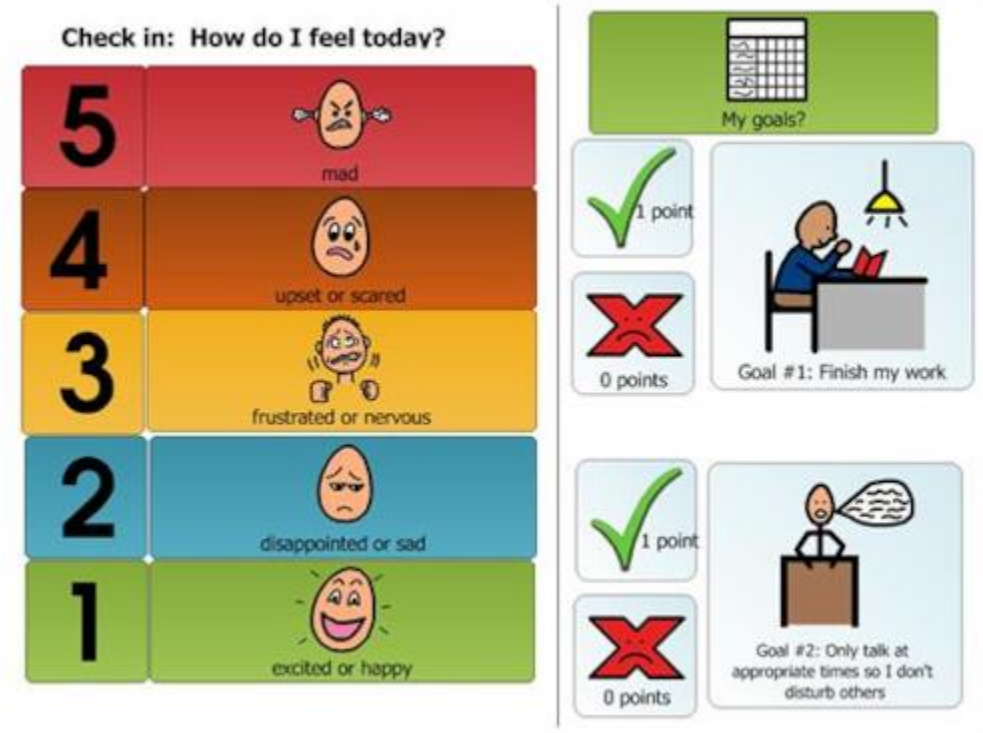
Alternative Methods of CICO Implementation

It is important to consider the accessibility of the CICO system for students with a range of abilities. As mentioned previously, it is important to note student age and cognitive abilities when implementing a CICO intervention. Students with disabilities may benefit from picture representations for their CICO sheets (see Figure below). Educators will be able to engage students with varying cognitive abilities by providing visual representations and simplistic point goals. Incorporating a feelings check-in can support students in identifying and

expressing their emotions for the day. Zones of Regulation (2024) indicates that being able to identify and sort motions into zones allows students to learn and practice self-regulation with educator support.

Figure 3

Check in Chart



Setting Events

We chose these events based on this research that suggests that students' behavior relies upon their eating habits in the morning, their day before school, and the amount of sleep they have received. According to the Victoria Department of Health (2023), eating in the morning supports every aspect of our bodies. This replenishes glucose supply to boost energy and alertness, which are

highly important to learners. Having positive experiences prior to school is extremely important to academic and behavioral performance during the day. Negative experiences in the morning can affect cognitive performance, problem-solving abilities, and decision-making processes. Sleep affects both growth and stress hormones, our immune system, appetite, breathing, blood pressure and cardiovascular health. NIH (2013) indicates that a lack of sleep could cause poor concentration, reduced reaction times, and an altered mood. The three setting events examined in this study were selected for these reasons. The impact of these events on our physical and emotional states seem great enough to warrant further research.

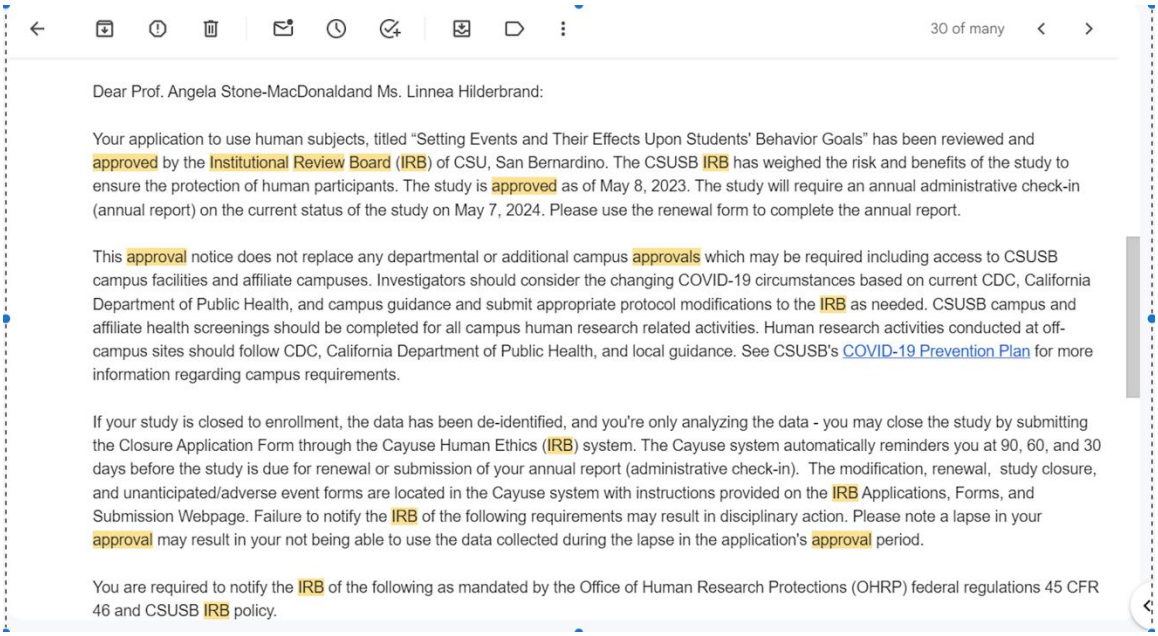
Other Potential Setting Events

Though these setting events seem to be highly important and influential over students' days, there are many other setting events that may be studied in future research. These setting events could include pain (i.e. toothache, headache, injury, etc.), illness, discomfort, or overall diet. These are a few of numerous setting events that may have an impact on a student's academic and behavioral outcomes. It is important to note that some students may have differing reactions to setting events. They may affect some students more than others. These effects may manifest themselves in other settings, such as at home, or in other programs. Something that is an upcoming concern for many educators is screen-time on devices. According to NIDA (2023), an excessive amount of screen time can lead to trouble sleeping, mood changes, and even

alterations to the brain. These are all factors that may affect student academic and behavioral performances in school. Additionally, NIH (2023) states that,”Research has shown negative associations between screen time, particularly television viewing, and the development of physical and cognitive abilities. Additionally, screen time has been linked to obesity, sleep problems, depression, and anxiety.” The impact of this upon students’ behavior is a hot topic in upcoming research and studies.

APPENDIX A:

TITLE PAGE: IRB APPROVAL LETTER



30 of many

Dear Prof. Angela Stone-MacDonaldand Ms. Linnea Hilderbrand:

Your application to use human subjects, titled “Setting Events and Their Effects Upon Students' Behavior Goals” has been reviewed and approved by the Institutional Review Board (IRB) of CSU, San Bernardino. The CSUSB IRB has weighed the risk and benefits of the study to ensure the protection of human participants. The study is approved as of May 8, 2023. The study will require an annual administrative check-in (annual report) on the current status of the study on May 7, 2024. Please use the renewal form to complete the annual report.

This approval notice does not replace any departmental or additional campus approvals which may be required including access to CSUSB campus facilities and affiliate campuses. Investigators should consider the changing COVID-19 circumstances based on current CDC, California Department of Public Health, and campus guidance and submit appropriate protocol modifications to the IRB as needed. CSUSB campus and affiliate health screenings should be completed for all campus human research related activities. Human research activities conducted at off-campus sites should follow CDC, California Department of Public Health, and local guidance. See CSUSB's COVID-19 Prevention Plan for more information regarding campus requirements.

If your study is closed to enrollment, the data has been de-identified, and you're only analyzing the data - you may close the study by submitting the Closure Application Form through the Cayuse Human Ethics (IRB) system. The Cayuse system automatically reminders you at 90, 60, and 30 days before the study is due for renewal or submission of your annual report (administrative check-in). The modification, renewal, study closure, and unanticipated/adverse event forms are located in the Cayuse system with instructions provided on the IRB Applications, Forms, and Submission Webpage. Failure to notify the IRB of the following requirements may result in disciplinary action. Please note a lapse in your approval may result in your not being able to use the data collected during the lapse in the application's approval period.

You are required to notify the IRB of the following as mandated by the Office of Human Research Protections (OHRP) federal regulations 45 CFR 46 and CSUSB IRB policy.

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