



White Paper Analysis

What Does a Three-Year Study Reveal About Influencing Student Behavior?

A Study of 1,000,000 Tardies Over a Three-Year Period

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Research and Development
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June 2008

What does a Three-Year Study Reveal About Influencing Student Behavior?

This study attempts to answer the following questions:

- Can student behavior be influenced?
- If so, how long does it take before behavior is changed?
- How quickly do students revert to prior unacceptable behavior?
- What percentage of students revert to unacceptable behavior?
- Do any students voluntarily improve their behavior long term?
- What percentage of students voluntarily improve their behavior long term?

Historical Background

In 1998, three independent school districts (ISDs) met with eCampusUSA™ representatives to discuss how to deal with their problems concerning student tardiness. Initially, the discussion focused on the best way to track students who were late by using the latest technology. However, the conversation soon turned to the more serious question of “How can we influence the behavior of the students and get them to class on time?”

A lively discussion ensued, and two basic principles emerged that were believed to be necessary to influence student behavior. These principles had not been tested and, perhaps more importantly, it was not known how they should be applied to get results, or how long those results would last. The two principles were:

1. A student must be held immediately accountable for their behavior, and the consequence had to be both immediate and consistent.
2. The parent should be involved, because they strongly influence their child’s behavior.

Afterwards, the discussion turned to how technology could be implemented to automate these principles in a consistent, efficient, and cost-effective fashion. At that point, it was determined that sending an email to the parent at the same time a tardy slip was issued was one step in the process. This made eCampusUSA™ the first student discipline system capable of immediately notifying a parent by email of their student’s specific consequence, getting them involved to help solve the problem. Another step was to automate the printing of customized parent letters for each student, showing the history of disciplinary action – again designed to get the parent involved.

Additional functionality was added, such as escalation of consequences. The ability to escalate discipline automatically was an important step, since it was agreed that the consequence had to be immediate and consistent, something only a rules-based system could provide. It was also agreed

that, if necessary, the ability to get the parent involved during the discipline was an important part of improving the student's behavior.

The process was untested, and it was not known if it would be effective. But today and millions of tardies later, real-world results have confirmed what was suspected in the beginning, supported by additional insights from the educators involved in the process.

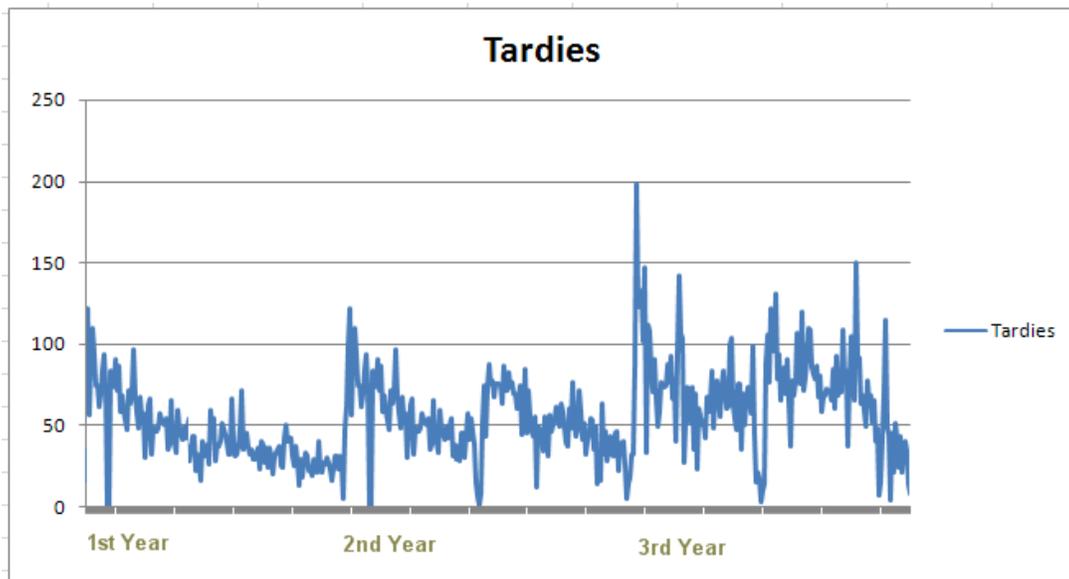
Special thanks to devoted educators, such as Sylvia Palacios at Frisco ISD, who were at that first meeting and who continue to be involved in the process. Without them, these studies would not be possible.

Can Student Behavior Be Influenced?

The data was analyzed for 1,026,777 tardies issued over a three-year period by schools that had implemented the rules-based software application system provided by eCampusUSA™, which escalated consequences if the student failed to meet a school's expectations. It was discovered that behavior can be immediately influenced if the student continues to be held accountable.

After examining the data for the three-year period, it was discovered that:

- The number of tardies is highest at the beginning of the school year.
- The tardy curve drops throughout the entire school year.
- There is a consistent 75-85% reduction in tardies when students are held accountable in the strictest schools.
- A slight peak occurs after holiday breaks, but never achieves the level seen at the beginning of the year.
- The increase of tardies after a holiday break rapidly declines and quickly exceeds results for the first half of the year.

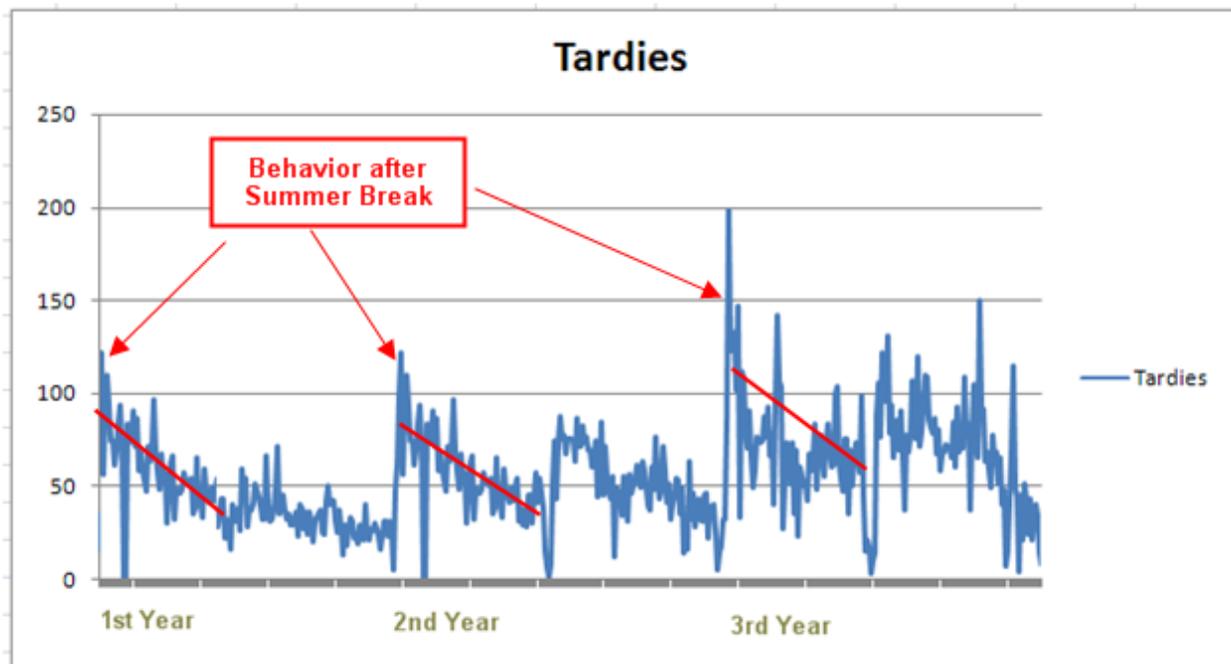


A behavioral change of 75-85% is significant, but also means that 15-25% of the student population who have a behavior problem do not change. This small part of the student population may require additional intervention. To this end, eCampusUSA™ has developed the discipline module to address persistent behavioral issues. It emphasizes a dynamic and innovative team approach to intervention that includes teachers, administrators, and parents.

Do Students Revert to Prior Unacceptable Behavior?

An analysis of the data shows that students quickly revert to old behavior when the system of accountability is removed. The question is, how long does it take for the old behavior to resurface?

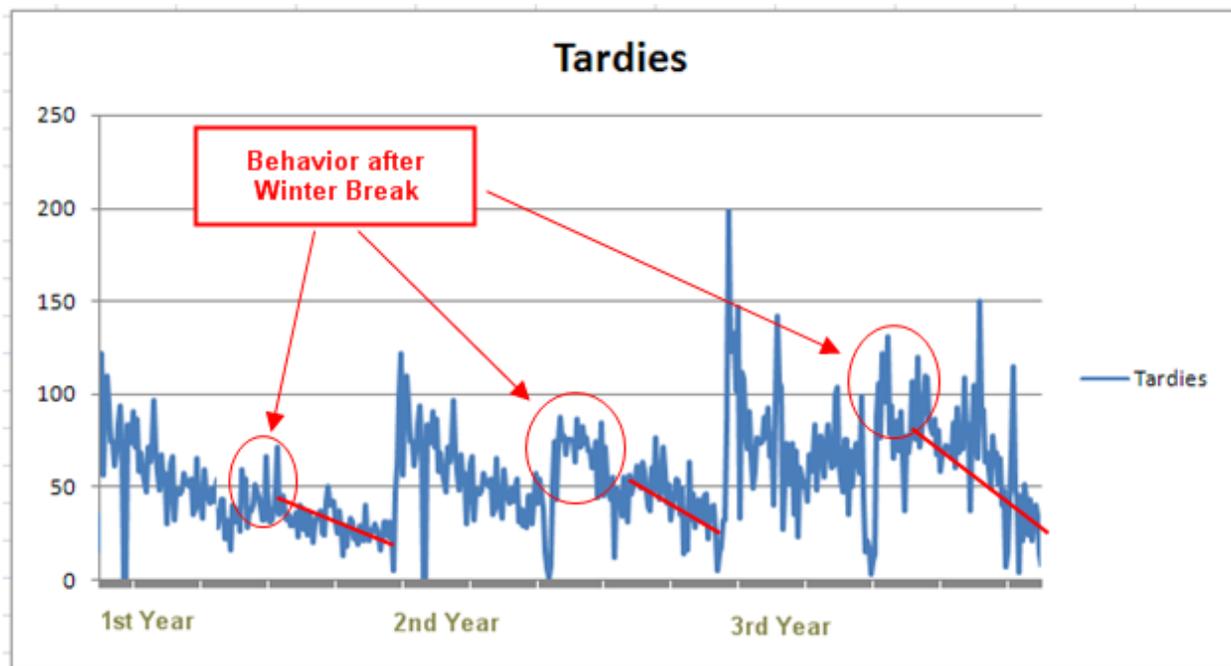
Every year, after summer break, most students revert to old habits of arriving late to school. As seen in the chart shown below, at the beginning of every year the school starts all over again in its attempt to improve behavior. Any gains made from the previous year are typically lost, since the students are not under a system of accountability during the summer. However, once the system is put in place again, it is immediately effective, as evidenced by linear regression analysis of the data shown by the sloping red line. An effectiveness of 75-85% can be accomplished in a relatively short period of time, but consequences and accountability must be consistently applied. Any failure to apply corrective action will result in a loss of previous efforts.



How Long Does It Take to Revert to Unacceptable Behavior?

To answer this question, the data must be observed over a smaller time span. The data was analyzed after a one- or two-week break, such as the winter holiday, to see if the old behavior resurfaced.

The data in the graph below shows that even a short break of two weeks can cause students to revert to previous behavior patterns. There is a peak that occurs in every case, for each school, after the winter break. It is never as high as in the beginning of the year, indicating a residual effect to consistent accountability. But it is substantially higher than what was measured in the weeks leading up to the break.



In summary, and to answer the question posed, previous behavior resurfaces in a matter of days when the system of accountability is removed. It appears that students need to be consistently reminded to stay on track. The use of consequences to modify behavior, also known as operant conditioning, is effective.

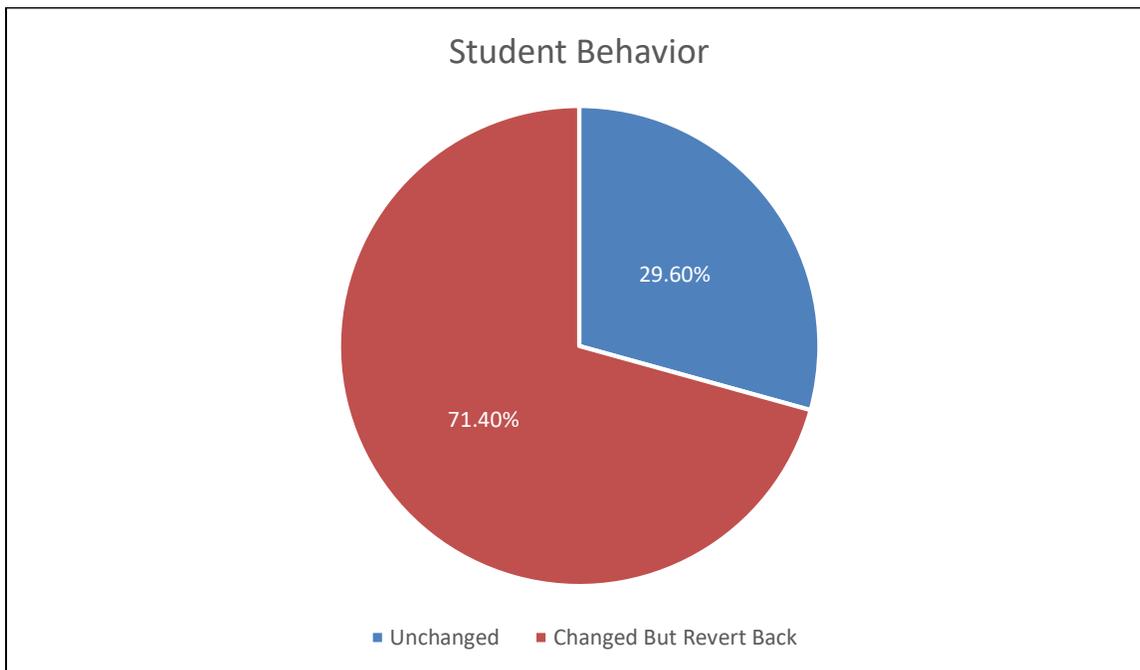
What Percentage of Students Revert to Unacceptable Behavior?

To understand the number of students who demonstrated a change in behavior by reverting to previous habits, it is necessary to measure the behavior both *before* and *after* a period of no corrective action.

The winter holiday break was chosen as the time period measured, since there was a consistent peak in tardies afterwards for all years in the study. The 14-day school period was measured prior to the break for each of the three-year periods, which established a baseline of 100%. The 14-day school period directly after the break was then measured. School and summary level averages were measured, which showed a deviation of 10.4%.

When combined, it was discovered that 29.6% of students revert to prior behavior when there is a period of no corrective action. This represents an increase in the number of tardy violations after each break. However, when corrective action is applied, 75-85% quickly comply with the rules.

The 71.4% in the chart below represents the percentage of students who have the same behavior both before and after the break. The 29.6% represents the number who previously corrected their behavior, but fell back into tardiness after an extended break.



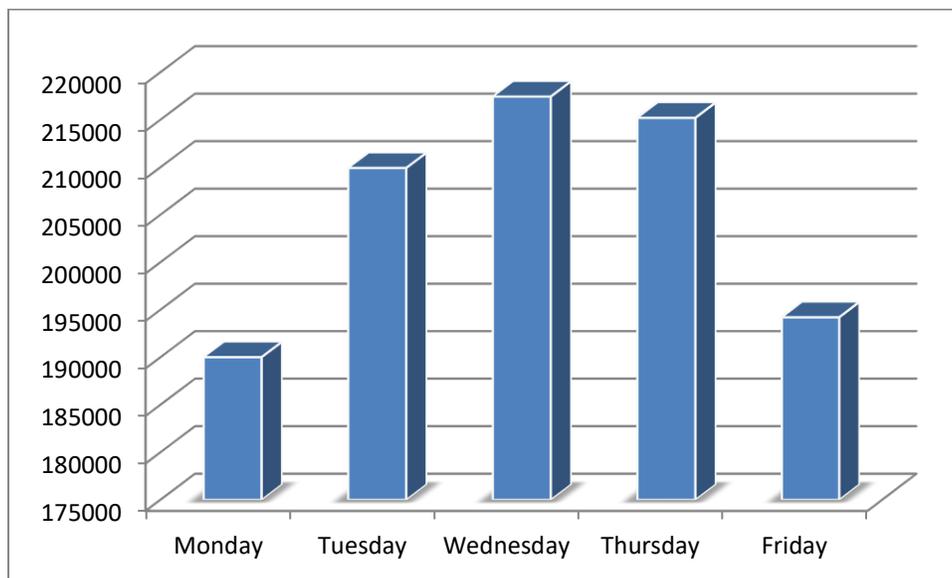
The conclusion that may be drawn is, when the system of accountability is removed, a large percentage of students quickly revert to previous behavior. The data set examined represents a temporary 29.6% average spike in the number of tardies when measured over a three-year period.

Every school, regardless of demographics, experienced a spike after each break. While the average is 29.6%, it fluctuates from 9.1% up to 42.8%, depending on the school.

Do Students Revert to Prior Behavior Over a Weekend?

When examining all 1,026,777 tardies to determine which day of the week had the most, it was expected that it would be Monday due to the two-day break over the weekend. However, the data showed that a two-day break does not seem to have an impact on student behavior.

When over a million tardies were summarized, it was found that Wednesday had the most tardies. However, when the data was examined on a week-by-week basis, there was no particular pattern. Sometimes, Monday showed the highest number of tardies, but it varied from day to day and school to school.



The chart shows that Monday and Friday have the lowest number of tardies when all 1,026,777 tardies are measured as a whole. It is important to recognize that, while this is representative of a large population of data, the data becomes quite random when examined in weekly periods. However, the data from holiday and summer break periods was not random, and demonstrated a clear pattern of student behavior.

In summary, it appears that two days off on the weekend does not result in students reverting to prior behavior patterns. However, periods of one week off or more appear to consistently impact student behavior, resulting in students reverting to previous behavior.

Is There any Voluntary Behavioral Conditioning?

Another purpose in examining the data was to determine if any voluntary behavioral conditioning (also known as classical or respondent conditioning) occurs. In other words, do some students appear to exhibit better behavioral habits long term? This is important, because it relates to maturity and self-governing by the student, which is the goal of corrective action. Operant conditioning is maintained through the use of consequences.

Types of students can be broken down into three basic categories:

1. Those who learn from consequences and change their behavior long term.
2. Those who learn from consequences and change their behavior short term.
3. Those who do not learn from consequences and do not change their behavior at all.

The students who learn from consequences, either short term or long term, are represented by the 75-85% drop in tardies throughout the school year. For every 10 students who are tardy, 7.5-8.5 change their behavior. This also means that, out of every 10 tardy students, 1.5-2.5 are resistant to change and require a higher level of intervention.

To answer the question of which students change their behavior long term, it is necessary to examine those who respond to consequences. Out of the 7.5-8.5 who respond to corrective action, 2.2-2.5 revert to old habits after an extended break of one week or more.

From this, the conclusion can be drawn that approximately 5-6 students out of 10 (50-60%) who are tardy develop better behavioral habits long term, when they are aware that a corrective action system is in place. If the system of accountability is removed, the data shows that even those 5-6 students will fall back into old habits.