Example 2

Part I: Action Plan

Summary of Initial Results

The formative REACT survey shows broadly consistent mediocre results across all categories at the summary level, with a mean of 2.64 and standard deviation of .11. Average scores ranged from a low of 2.44 in the Classroom Connectedness class to a high of 2.75 in the Goal Orientation class. The small standard deviation and range show that scores were concentrated near the mean and did not vary substantially across categories. However, there is more variability in responses to specific questions within some of the categories. The demographics of this section of Algebra I are as follows: there are 17 students in all, although only 15 submitted survey responses. All are freshmen, although one is repeating the grade after failing English 9 last year. In order to reduce the minutiae in the following summaries and analyses, positive and mostly positive results are grouped together and referred to as “positive,” and similarly negative and mostly negative results are grouped together and referred to as “negative.”

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| --- | --- | --- | --- | --- | --- | --- |
| **Category** | Classroom Connectedness | Differentiated Instruction | Formative Feedback | Goal Orientation | Instructional Presentation | Positive Reinforcement |
| **Score** | 2.44 | 2.65 | 2.70 | 2.75 | 2.69 | 2.61 |

*Table 1: Summary Scores for the first survey*.

Scores within the classroom connectedness category reveal a striking lack of enjoyment of the class by the students. For the questions “My teacher makes learning enjoyable,” “My teacher makes class fun,” and “I like this class,” only four students responded positively to the first and only three each to the next two. Clearly, the students are unhappy with some aspects of the course. Low scores for these three questions explain why the overall classroom connectedness score was the lowest across all the categories. Responses to the remaining questions in this class were split approximately 50%/50% between positive and negative responses.

Turning to differentiated instruction, the scores across all questions sat fairly near the middle, with half of students responding positively and the other half negatively for each question. These middling scores combined to produce the 2.65 overall score in differentiated instruction. The question with the fewest positive responses in differentiated instruction is “My teacher knows what subjects or skills are easier for me,” with only 6 positive responses. Conversely, the questions “There are other learning activities to do when I finish my work early,” “I have enough time to finish my work,” and “Classwork is too hard to do on my own,” each saw 10 positive responses.

Questions in the formative feedback section varied substantially, from a low of 5 students responding positively to “We get feedback on all of our work,” to a high of 11 responding positively to “My teacher shows me how to correct mistakes on my work.” It is difficult to discern a general pattern to responses in this category. While few students say they get feedback on all their work, more (9) say that they get back graded work quickly and 8 say that they get helpful notes on such work. Also, while 11 say they are show how to correct their mistakes, only 7 say that their mistakes are used as learning opportunities.

In contrast, a clear pattern emerges in responses to the goal orientation class. Ten students each responded positively to “My teacher explains why learning is important,” and “My teacher and I set goals for my learning,” but only 6 responded positively to “We track how much we learn in class,” and only 7 to “My teacher helps me make plans for how I’ll do my work.” Therefore, while students have goals and understand from where these goals emerge, they are less clear about how goals are to be met and how progress towards these goals will be ascertained.

As in other categories, responses in the instructional presentation cluster are mixed, with a high of 12 students responding positively to “My teacher asks us questions that make us thinks about what we are learning,” to a low of 5 students responding positively to “My teacher explains things in more than one way.” When considered alongside the fact that only 7 students responded positively to “My teacher helps me learn ways to answer different kinds of questions,” it appears that students do not feel as if they are learning widely applicable techniques or different problem-solving approaches. However, the students are more positive about the (few) methods they do learn, being able to both identify them (11 students saying that they are told what they will learn before the lesson begins) and explain them via questioning.

The positive reinforcement cluster also witnesses wide variability, from a high of 12 students responding that the teacher recognizes good behavior to a low of 4 students who believe the teacher does not get upset with the class. Beyond problems with the teacher becoming upset at the class, students are distracted by their peers (all but 6) and observe students picking on each other (all but 6). As expected given the large number of students who say their good behavior is recognized, many students (9) say they are told when they do well in class.

Synthesis of Results

The most substantial problem revealed by the REACT results is the unhappiness of most students in the class. With only 3 students reporting that they like the class, the rest may be tempted to cause trouble, not put effort into their studies, or distract their classmates. Similarly low numbers of students find learning enjoyable or the class fun. The survey reveals myriad possible explanations for the students’ disquiet, including instructional problems (the teacher not knowing what subjects are easy for the students), feedback problems (the teacher not providing feedback on all work), and management problems (the teacher becoming upset, students picking on each other, and students distracting each other).

Interestingly, the number of students who enjoy the class (three) is smaller than the number reporting displeasure in any one other question. With the exception of “My teacher gets upset with the class,” no less that 5 students responded positively on each other individual question. This indicates that those students displeased with the class are unhappy for a variety of different reasons, not all of which are shared by their peers. As such, any plan to address the problems revealed in the survey must make changes in several of the low-scoring categories in order to resolve the students’ problems with the course.

A positive trend that emerges from the data is that students generally know what their goals are. Large majorities of students report knowing what the lessons will teach in advance and say that the assignments build towards meeting their goals. The teacher also recognizes movement towards these goals, with students providing high marks in the categories of the teacher correcting mistakes and recognizing good behavior. However, the follow-through is at times lacking. Students note that they do not always receive varied explanations for subjects taught, receive feedback for their work, or track how much they learn. Therefore, students might not feel as if they actually have met or are capable of meeting their goals, which in turn may lead to a portion of the widespread disillusionment with the class.

Plan Based on the Results

The primary goal of this action plan is to improve student happiness and satisfaction with the class and address the low scores in the classroom connectedness category. Such improvements will come in two ways: direct and indirect. In terms of direct improvements, students will be inundated with tangible rewards. The first tangible reward will be a class competition system to complement the tickets and Friday raffle rewards already in place. Different sections of Algebra I will compete against one another in terms of behavior tracked on the wall, receiving a numeric score for each day. On a weekly basis, the students in the best-behaved class, namely the section with the greatest total score at the end of the week, will all get candy. This system is intended to both increase student morale and to build on the students’ competitive nature to motivate them. Also, the fact that the students in each section must work together to receive the reward should create disincentives for the sort of interpersonal conflicts between students that exist now.

The second direct, tangible reward, at the suggestion of H. Olivier, will be to reward students with starbursts for little or no justification, even merely showing up to class. This reward system will reach students who are not usually recognized owing to poor behavior or disengagement, and it should decrease outward hostility and resentment. Providing starbursts in addition to tickets can reduce the time between positive behavior and physical reward and help students that lose the raffle be rewarded. Without charisma or great acting or improvisational abilities on the part of the teacher, tangible rewards provide a way to directly improve students’ mood in class and help build classroom culture.

The action plan also seeks to address students’ unhappiness indirectly, by targeting other low-scoring questions for improvement in the hopes that improving students’ academic or social experiences will lead to improved overall enthusiasm. Remaining calm in the face of class disruptions is imperative, and doing so will improve scores in the positive reinforcement category. Using ideas presented in internal professional development for first-year teachers on de-escalation and dealing with challenging students, conflicts will be addressed calmly and, when possible, at a later time with greater communication between the teacher and students. In particular, the students’ point-of-view will be re-stated and addressed specifically by the teacher.

Finally, the system of providing feedback for students will be standardized. While graded work was returned earlier this year, the process was inconsistent. To address student concerns about receiving feedback on work, homework will be given twice a week, graded, and returned. Similarly, bell work will be collected once per week, graded, and returned. Notebooks for classwork will be graded less frequently and on completion. Student work on classwork will be recognized in class with additional praise or positive rewards (e.g., starbursts). With a standardized system upon which the students can rely, they should become more used to how their grades arise and how they are performing in the class.

Part II: Final Report

Summary of Final Results

The summative REACT survey shows a mix of mediocre and moderately positive indicators across the surveyed classes. The mean score is 2.925 and the standard deviation is .189. Average scores ranged from a minimum of 2.7 in the Positive Reinforcement class to a maximum of 3.22 in the Instructional Presentation category. The standard deviation shows some variability between scores in different categories, although it is not notably large. As was the case in the formative survey, the relatively similar averages mask wide variability in responses within individual categories. Demographics in the surveyed class did not change between administration of the initial and final surveys. In the second survey administration, 14 students responses were counted towards the results.

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| --- | --- | --- | --- | --- | --- | --- |
| **Category** | Classroom Connectedness | Differentiated Instruction | Formative Feedback | Goal Orientation | Instructional Presentation | Positive Reinforcement |
| **Initial Score** | 2.44 | 2.65 | 2.70 | 2.75 | 2.69 | 2.61 |
| **Final Score** | 2.72 | 2.86 | 2.95 | 3.10 | 3.22 | 2.70 |
| **Change** | +.28 | +.21 | +.25 | +.35 | +.53 | +.09 |

*Table 2: Comparative scores for the first and second surveys*.

Scores within the classroom connectedness category range from a low of 5 positive responses in the “My teacher makes class fun,” to a high of 12 positive responses in the “My teacher wants me in class,” category. Other scores fell in the middling responses near 8 positive replies. The students tended to be least positive when evaluating their enjoyment of the class, with the aforementioned low of 5 students saying class is fun, 6 students responding positively to “My teacher makes learning enjoyable,” and 6 students marking “I like this class.” On the other hand, trust levels are high, with 9 students trusting the teacher, and students feel wanted in class.

Responses in the differentiated instruction category range from a low of 4 positive responses for “Homework for this class takes me too long to finish,” to a high of 12 for “My teacher slows down if we are confused.” Students were generally positive, with a mode of 10 positive responses, although lower scores emerged in the “I always understand all of the lessons in class,” (7 positive) and “Classwork is too hard to do on my own.”

Within the formative feedback category, scores ranged from a low of 6 positive responses for “It takes a long time to get our work back in class,” to a high of 11 positive responses to “My teacher shows me how to correct my mistakes on my work.” Students were mostly positive about the quality of feedback provided on graded work, knowledge of their own performance in the class, and receiving feedback with which they can improve, with 10 positive responses each. Fewer indicated they were checked on during independent practice, however, with only 8 positive responses in this category.

The goal orientation category saw responses range from a low of 8 positive responses each to the “We track how much we learn in class,” and “My teacher helps me make plans for how I’ll do my work,” to a high of 11 in the “My teacher sets goals for our learning when we start a new activity or lesson,” and “My teacher explains why learning is important,” categories. This low range shows consistency across this category, with mostly positive responses. The class generally comprehends its goals better than it meets them, a phenomenon supported by its lackluster test scores. Nevertheless, students tend to be happy with the goal orientation in class.

Turning to the instructional presentation category, scores range from a low of 7 positive responses in the “We learn tricks, strategies, or shortcuts to learn and remember things,” to a high of 13 positive responses to “My teacher explains things in more than one way.” Closures were also a strong point of the survey, with 12 students affirming their existence. With at least 9 students generally contend with all surveyed items in instructional presentation except the aforementioned minimum question on tricks, the scores are overall satisfactory.

Several questions saw poor results in the positive reinforcement category, although there was wide variability in the results. Only 4 students responded positively to “I’m distracted by other students in the class,” the lowest among questions in this category, and 11 students responded positively to “My teacher tells me when I do well in class,” the maximum among positive reinforcement questions. While positive reinforcement is present, with 10 students each reporting that they get positive feedback and recognition for good behavior, bad behavior nevertheless persists. Only 6 students did not believe students generally bullied each other in class, and only 5 did not notice the teacher becoming upset at the class.

Comparison of the Results

Scores increased in each category from the formative to the summative REACT surveys, with a minimum increase of +.09 in the positive reinforcement category to a maximum increase of +.53 in the instructional presentation category. In two categories, goal orientation and instructional presentation, scores exceeded 75% overall. However, problems originally identified in the classroom management category persisted, and the score increase in this category was correspondingly low.

Considering the classroom connectedness category, the number of students reporting they like the class doubled, from 3 to 6. There were also increases in the number of students who said the class is made fun, from 3 to 5, and the number of students who find learning enjoyable, from 4 to 6. While the increases in these categories are positive signs, the final results are still not at a satisfactory level. Other questions saw little substantial change, or confusing changes: while the number of students saying the teacher wants them in class increased from 10 to 12, the number of students saying they did not have a hard time getting along with the teacher decreased from 9 to 6.

Moving to the differentiated instruction category, students have become disillusioned with the difficulty of the class. Of the original 11 who did not believe classwork was too difficult, only 7 remain. On the other hand, 12 students now believe the teacher slows down if the class is confused, up from 9 in the original survey. Students are more positive about the teacher’s knowledge of their individual challenges as well, with 10 reporting that the teacher understands their difficulties, up from 6 originally. Other results remained broadly consistent between the two survey administrations.

In terms of formative feedback, students became increasingly concerned with lethargy on the part of the teacher in returning work in a timely fashion, with the original 9 satisfied students dropping in number to 6. However, the volume of work returned improved, with the original 5 satisfied students increasing in number to 9. Minor increases exist across other categories, such as the teacher writing helpful notes on work and providing feedback that helps the students improve. If the pace of returning work could be improved, formative feedback would likely exceed 3 in total score in the future.

Goal orientation stood out as one of the higher-scoring categories during the first survey administration, and students remained broadly positive for the second iteration of the survey. There were no decreases among the individual questions, and while increases were small overall, the number of students who reported that goals were set before lessons increased from 8 to 11. There remain problems with goal tracking and planning, but students are broadly positive in terms of recognizing their goals.

Some of the largest gains between the first and second surveys were found in the instructional presentation section. However, increases were not uniform. The number of students who reported hearing thought-provoking questions declined from 12 to 10. In several other categories, increases were small or non-existent. The gains in average instructional presentation score came from students noticing closures (8 students to 12 students), thinking during the lessons (8 students to 12 students), and the teacher explaining concepts in many ways (5 students to 13 students responded positively). Consistently low scores in the shortcuts question may result from the curriculum, which discourages the teaching of tricks or shortcuts, preferring to focus on deep explanations that illustrate as many mathematical ideas as possible. While the increases have caused instructional presentation to have high overall scores, the teacher must re-emphasize asking questions in class to address the slight decrease between the first and second surveys.

Finally, the scores in positive reinforcement remained stagnant at a low level. There were increases in some specific questions. For example, 10 students reported positive comments about their work, an increase from 6 in the original survey. Smaller increases of at most 2 were also observed in questions about students treating each other respectfully, the teacher getting (noticeably) upset with the class, and students picking on each other in class. However, small decreases (at most 2) were seen in the remaining questions in this category. The most urgent problem to address is that others distract students in class. The corresponding question has had few positive responses in either survey, declining from 6 to 4.

Reflection on REACT

The primary goal of the action plan was to improve the low scores in the classroom connectedness category, specifically in those questions related to student happiness. Average scores in the classroom connectedness category increased by .28 from 2.44 to 2.72, a middling increase when compared to the other categories. As such, it may be questioned whether the plan had much overall effect, particularly considering the large increases in the instructional presentation category that was not principally targeted for improvement. However, the classroom connectedness category is no longer the lowest scoring, with that dubious honor taken by the positive reinforcement category (2.72 vs. 2.70). By analyzing the scores within several categories, particular the classroom connectedness category itself and the positive reinforcement category, one can speculate as to which elements of the plan succeeded and which failed.

The action plan consisted of direct action through increased tangible rewards (a dual class competition and free starburst system), conflict de-escalation to improve scores in the positive reinforcement category along with happiness overall, and a standardized work return system to improve student satisfaction in the formative feedback category. The tangible rewards system seems to be a moderate positive effect on the classroom connectedness scores. Six students each responded positively to the questions on liking the class and finding learning enjoyable, and five responded positively to the class being fun. While these scores are low, when considering the abysmal original scores of 3, 4, and 3 positive responses to these questions, respectively, along with the fact that that the summative scores are taken out of a total of 14 as opposed to the original 15 students, there have been concrete improvements. However, there may need to be additional changes beyond tangible rewards to push the scores into a more positive range. Furthermore, the two rewards systems do not coexist well and should be merged or modified: with all students receiving rewards every few days by default, the allure of the class competition is diminished. The teacher has also not been sufficiently emphasizing the class competition in class to directly affect student behavior.

Conflict de-escalation and a focus on a more positive attitude on the part of the teacher may have contributed to 6 students believing that the teacher does not generally get upset with the class, an increase from 4 originally. However, these strategies proved unable to resolve classroom management problems generally and interpersonal conflicts such as bulling and distracting behavior amongst students specifically. Low scores in questions such as “Sometimes I’m distracted by other students in the class,” as discussed in the Comparison of Results section, contributed to positive reinforcement’s slide to the bottom among the categories in overall score. This facet of the action plan was not sufficient to address the problems in classroom management that stemmed from students’ interactions with each other as opposed merely to students’ interactions with the teacher. Therefore, a new strategy is needed to prevent students from harming each other’s experiences in class and improve the class culture.

The formative feedback scores increased by .25 to 2.95 from 2.70. Students became more satisfied in receiving feedback on all of their work, from 5 to 9 students. Also, 10 students noted helpful feedback on graded work as opposed to 8 initially. Therefore, the action plan seems to have helped the data improve in the formative feedback category. One unfortunate side effect is that the efficiency has not improved, and as noted in the Comparison of Results section, students are now unhappy with the time it takes for graded work to be returned. A component of this sluggishness is finding time to return work in class rather than actually grading it, so several days can be easily shaved off the turnaround time in the future. Overall, however, the consistency of what work is returned and the format of comments seems to be appreciated by the students, and when the speed is increased, formative feedback should rise to become one of the satisfactory categories.

The action plan thus had a mixed record. While some improvements with the system of returning graded work stood out, and student satisfaction improved slightly, the classroom management component did not see consistent increases. Furthermore, the limits of the tangible rewards system were illustrated by the fact that only a handful of students moved from finding the class not fun to fun even after the increase of rewards. A modified action plan would fine-tune and harmonize the rewards system while simultaneously focusing on improving the students’ interpersonal relationships in class to help with classroom management. With a better environment vis-à-vis their peers, students’ satisfaction with the class as a whole could rise accordingly.