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Case Study: Ortega Review Process



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Abstract

Alicia Ortega teaches 9th grade biology at IDEA College Preparatory School (Title 1 campus) in Edinburg, Texas. Over the fall and winter of the 2014-15 school year, Ortega created and implemented a review process in preparation for the State of Texas Assessment of Academic Readiness (STAAR) for biology, an end-of course (EOC) examination. Ortega’s exam results were phenomenal: students’ passing rate increased from 83% in 2014 to 100% in 2015; commended performances increased from 24% to 36%. Ortega and her students attribute their success to tracking student data and implementing the Biology Science Starters through a student-driven review process. This study presents the Ortega review process.

I. Student Data Mining

Throughout the year, students tracked their quiz scores. Ortega utilized a quiz generator to create quizzes based on specific Texas biology standards, the Texas Essential Knowledge & Skills (TEKS). When students received a graded quiz, they tracked their own performance according to TEKS assessed. Ortega had a chart (Fig.1) copied on the back of each quiz. Based on individual quiz results, students filled in the “Data” column and then used the graph and color legend to fill in the “Percentage” and “Color” columns. The colors allowed students to readily identify areas that required remediation, from red as failure to green as mastery. Students stored this quiz data in individual student folders that also contained reference materials and vocabulary cards they created using the Biology Starter flashcards. Ortega notes that students quickly became accustomed to this process, which improved their awareness of individual areas of need. “By providing students with an effective way to monitor their progress throughout the course, I could give them immediate feedback without actually having to sit down and have that one-to-one conversation. Students began taking responsibility for the areas where they needed improvement as well as the areas they excelled in. As the students became more aware of their performance, remediation became individualized and extremely specific to each student’s need. Students were able to access the Biology Starters at home on their own time and obtain that quick tutorial so that the next time the objective was assessed, they could perform at a higher level. This program was particularly convenient for my students who participated in various extracurricular activities or students who just wouldn’t stay after school. As long as I could see through my Scientific Minds teacher account that they had completed the lesson, I gave them credit for the missed tutoring hours.”

TEK	QUESTION NUMBER	DATA	PERCENTAGE	COLOR
9.C	1, 2, 3, 4	____ / 4		
9.B	5, 6, 7, 8, 9, 10	____ / 6		
10.C	11, 16	____ / 2		
10.A	12, 13, 14, 15, 17, 18, 19, 20	____ / 8		

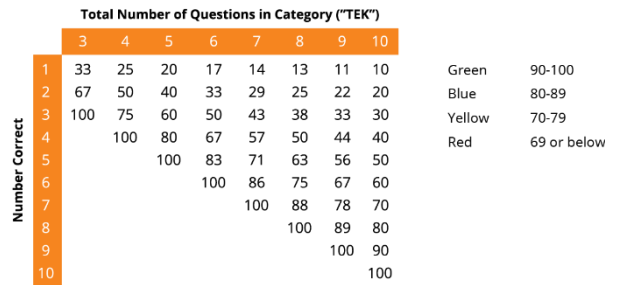


Figure 1

II. Benchmark Tracking

In the spring, all students took a biology benchmark test required by the district. When results came back, Ortega reviewed the test with her students, who tracked their own test data. She began by giving each student a single-page benchmark tracker included as Appendix A. Ortega and her students moved through the benchmark together

with students filling out their individual trackers. Then they spent about 10 minutes comparing this data to the data in their student folders.

III. Student-driven Review/Remediation

Once students completed the benchmark tracker, they could readily identify TEKS that required remediation. Students worked through the review process during class time in the weeks leading up to state testing. Ortega stayed on her feet the whole class period, answering questions and monitoring individual student progress.

A. To begin, students completed a 5-question paper quiz aligned to a particular biology standard. Ortega generated 3 different quizzes for each standard; the quizzes were progressively more difficult. These paper quizzes were organized in 5 file tubs, the 5 units on the tracker.

Ortega used a program called GradeCam that allowed students to score their own quizzes. "The students write their scores on the tracker so I can set realistic expectations for success on each objective."

B. If a student scored below 80% on the first quiz, he opened the Biology Starter(s) aligned to that standard. To find aligned Biology Starters, he used the alignment tool provided in his Scientific Minds' account, which he accessed in the classroom using any device with Internet access (personal phone, tablet, or computer). He then completed the following:

- Viewed the Science Starter on the Explain tab and completed the accompanying note-taking sheet for the Starter (Ortega kept multiple paper copies of each note-taking sheet filed alphabetically in a cabinet for easy access)
- Moved through all the flashcards on the Elaborate tab and completed a Frayer-style flashcard template (Fig. 2) for each term
- Completed the flashcard quiz on the Elaborate tab
- Completed the quiz on the Evaluate tab
- Earned a passing grade on the combined quiz score

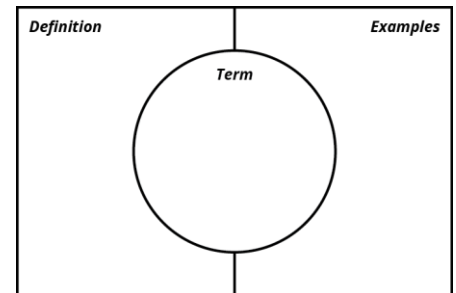


Figure 2

C. Once the student earned at least an 80% for the Biology Starter(s) listed, he pulled the next paper quiz and retested. If the student earned a grade of 80 or higher, he showed Ortega, and she stamped the tracker. The student then moved on to the next TEK in the unit and completed the above process again. If the student still did not earn a passing grade, Ortega assessed the student's overall progress and either worked with the student immediately or assigned out-of-class tutoring. "When this happens, it is important you know your students' abilities and have realistic expectations as to how you expect that student to perform on the state mandated assessment."

Using information from student trackers, Ortega was able to support students with both whole-class and individual remediation for concepts that they either collectively or individually struggled with. She created a poster for each class with TEKS listed across the top and student names down the side, and used colored stickers to track student results for the paper quizzes. This allowed her to see when multiple students in a single class or across all classes were having difficulties with a particular standard; she could then take the time to re-teach the concept to the whole class. Ortega notes, "I also found it fascinating how the program allowed my coworkers to support me and the students during this critical test preparation. Scientific Minds' teacher accounts have packets of lessons that can be easily printed. During intervention periods, even a teacher with little to no knowledge of biology can facilitate the students' progress. Anybody can use this program regardless of how proficient they feel with the content." The students reviewed until about a week before the test. She gave them a 60-question final benchmark to see how they had progressed and then re-taught last minute objectives.

IV. Results

When Ortega received exam results, she knew the review process had been a success. Students' passing rate increased from 83% in 2014 to 100% in 2015, and commended performances increased from 24% to 36%. "The results completely exceeded my expectations as a first-year teacher. Words cannot express the amount of gratification and pride I felt in myself and my students. I had watched them work incredibly hard and remain focused throughout our review process... nothing was more rewarding than delivering the scores to the students individually. Students that had never passed a state-mandated assessment, for the first time, got to hear good news. They saw how proud of them I was and told me that they would be forever grateful that I never gave up on them."

Appendix A

Name:

UNIT	TEKS	QUESTION #	# CORRECT	PERCENTAGE	COLOR
1	4.A	52	_____/1		
1	4.B	28, 43	_____/2		
1	4.C	2, 20	_____/2		
1	5.A	4, 26	_____/2		
1	5.B	41	_____/1		
1	5.D	13	_____/1		
2	6.A	30, 47	_____/2		
2	6.B	18	_____/1		
2	6.C	16	_____/1		
2	6.D	37	_____/1		
2	6.E	1, 9	_____/2		
2	6.F	3, 34	_____/2		
2	6.G	50	_____/1		
2	6.H	22	_____/1		
3	7.A	33, 49	_____/2		
3	7.B	44	_____/1		
3	7.E	7, 40	_____/2		
3	7.F	24	_____/1		
3	8.A	35	_____/1		
3	8.B	11, 38	_____/2		
3	8.C	15	_____/1		
1	9.A	17, 39	_____/2		
4	9.B	21	_____/1		
4	9.C	32	_____/1		
4	10.A	19, 27, 45	_____/3		
4	10.B	5, 29, 36	_____/3		
4	10.C	42	_____/1		
4	11.A	23, 53	_____/2		
5	11.B	25	_____/1		
5	11.D	10, 51	_____/2		
5	12.A	8, 48	_____/2		
5	12.C	31, 46	_____/2		
5	12.D	14	_____/1		
5	12.E	6	_____/1		
5	12.F	12, 54	_____/2		
GREEN: 100-90		BLUE: 89-80	YELLOW: 79-70	RED: 69 AND BELOW	