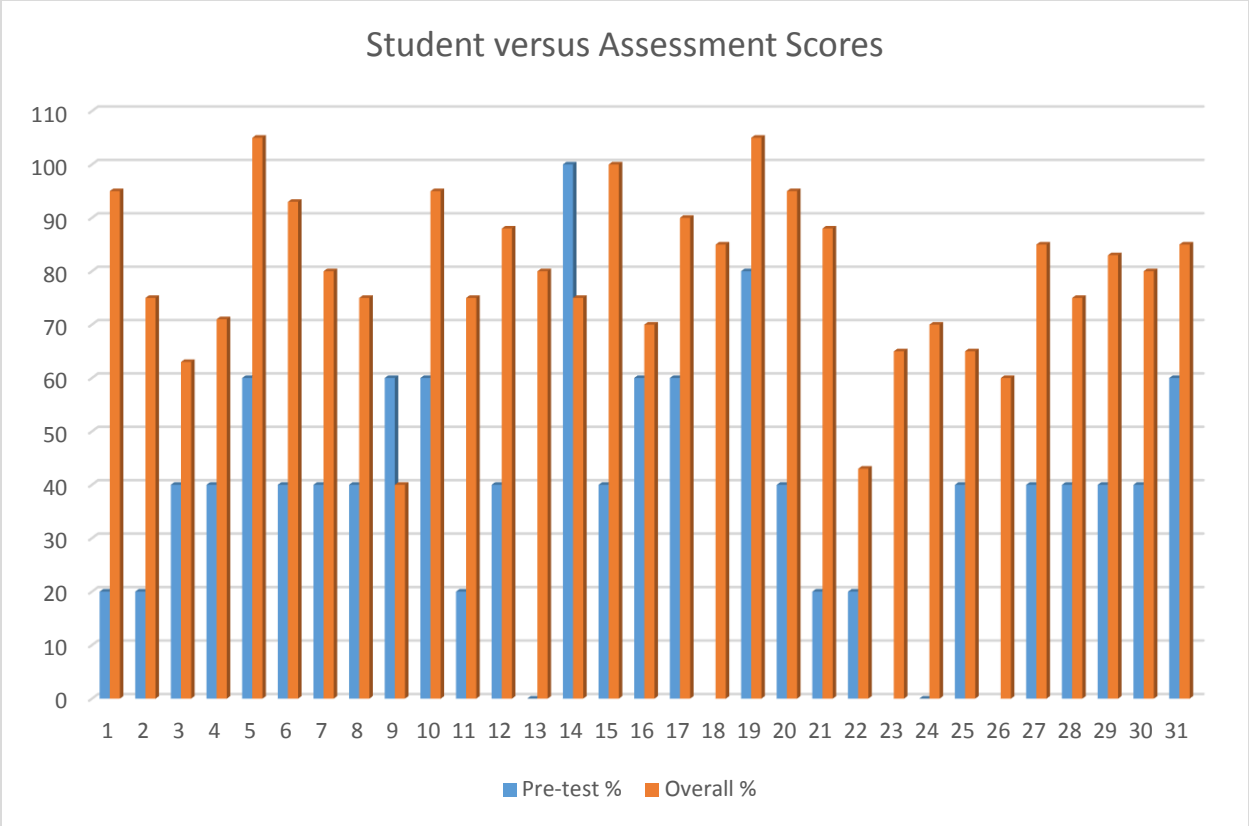
Data Analysis

Unit 6 of this Mathematics 8 course covered angles created by parallel lines and transversal as well as angles of and classifications of triangles. Some of this information had been taught to the students in a previous grade, though most had not. As the data shows, only two students were proficient with the material before the unit was covered in class as evidenced by pre-test scores. Student 19 is a regular high-achiever and is looking to be placed in an honors program next school year. (Student 14's score is an abnormality and will be discussed in detail later in the paper.) The rest of the class had some prior knowledge but certainly not enough information as to warrant skipping or rushing through the unit.

The assessments, both formative and summative, that were given during this unit were valid. Each assessment either formally or informally measured the students understanding of the relationships between parallel and transversal lines, their ability to classify triangles, and their application of the interior angle theorem. Each written assessment directly correlated to the summative assessment used for the unit as well as the standards being assessed.

This data was gathered from 31 students, 12 of which are female (Students 1, 5, 7, 9, 11, 13, 14, 18, 22, 23, 24, and 25.) Six students are Hispanic (Students 6, 15, 16, 17, 22, and 24), one is African American (Student 8) and one is of Pacific Islander decent (Student 26.) Student 32 is Native American, but was unable to take both the pre-test and the post-assessment in the conventional manner due to hospital stays and therefore was no included in this study. For most of the students, percentage scores increased by 20 points or more from pre-test to post-assessment. This supports that a substantial amount of knowledge was gained by the students over the course of the unit.



One of the exceptions to the 20 point increase in score was Student 16. While still increasing, it only changed by 10 points. Student 16 is fluent in both English and Spanish. He has an IEP which enables him to have more time to finish projects and tests. His female counterpart, Student 24 (also fluent with both languages and having a learning disability) obtained the same score on the post test. However, her climb was much higher a she received a 0% on the pre-test. I believe this difference in improvement ratio to be an effect of work ethic. Student 24 is not afraid to ask questions, or show to her peers that she has to work hard to achieve her scores. Student 16 is always looking over his shoulder at his peers and will only sit down to work diligently if no one else is around. I am curious if this is a cultural trait, as many of the male and female Hispanic students in other classes I have observed have exhibited like tendencies, respectively.

Two students, Student 9 and Student 14, scored higher on the pre-test than on the post-assessment. Both are white females, neither have an IEP nor are they heading into the honors program

next year. Both girls scored much higher on their pre-test than their scores have historically predicted. They also both missed questions on the post-exam that they had answered correctly on the pre-test. Neither student was sitting near a peer whom scored higher than they themselves did, so I have ruled out cheating as an explanation for the events. Perhaps, pre-test day was simply a 'good day for guessing.' However, I am looking into whether the girls respond better to exams broken up into smaller sections with a break in between each in hopes that this will assist the girls in being able to succeed in the future.

Mathematics has long been considered a male dominated field. While there are always exceptions to the rule, this standard still holds true in this classroom. The average scores for males were 9.7 points higher than those of females, a full letter grade. White females are closing the gender gap to 5 points difference from their male counterparts. However, the margin grows considerably larger when comparing Hispanic males and females. Hispanic females scored an average of 30.2 points lower than their male cohorts. That is 3 marking levels of difference. Part of this discrepancy could be due to the small number of female students from which to draw data. Also, the girls were each hindered by other factors. Student 22 is not as fluent with the English language as her male counterparts and Student 24 has a noted learning disability that only one Hispanic male of four shares.

The learning gap in mathematics is closing considerably. Yet, further assistance is needed to help Hispanic females cross the divide in order to compete academically with their peers.

Yellow highlight matches the questions students missed on the pre-assessment.

'X' marks the corresponding problems marked incorrect on the post-assessment.

Student	Pre-test %	#1	#4	#11	#15	#18	Overall %
1	20				X		95
2	20			X	X		75
3	40		X		X		63
4	40		X	X	X	X	71
5	60						105
6	40						93
7	40				X		80
8	40				X		75
9	60		X		X	X	40
10	60						95
11	20				X		75
12	40				X		88
13	0						80
14	100		X				75
15	40						100
16	60				X		70
17	60		X		X		90
18							85
19	80						105
20	40						95
21	20					X	88
22	20		X	X	X		43
23					X		65
24	0				X		70
25	40		X				65
26					X	X	60
27	40						85
28	40				X		75
29	40				X	X	83
30	40				X		80
31	60				X		85