EXHIBIT 4

The Achievement Gap Is Not Widening:

A Response to the Fisher Plaintiffs' Unsubstantiated Claims

(taken from ECF 2320)

Halley Freitas, Ph.D., senior director of assessment and program evaluation, curriculum, and instruction for the District, studied and prepared a report on longitudinal data on District student academic performance in AzMERIT testing, disaggregated by grade level and race/ethnicity (the "Freitas Report"). A copy of that report is attached as Exhibit A hereto.[1] The Freitas Report is uniquely informative because, unlike prior studies of academic performance in the District by race/ethnicity, it compared performance of the same cohort of more than 2,000 students during five consecutive years, tracking them from third grade through seventh grade.

The Freitas Report documented and concluded that student performance across races and ethnicities conformed to the same pattern: improvement in elementary grades followed by a decline in the middle school grades, as to mean percent proficiency. And although there is a gap between achievement for black and Hispanic students and achievement for white students, Dr. Freitas' study showed that the gap is not widening. Over the five years of data, mean English language arts ("ELA") scores improved by an average of 10.8 points per year for black students, 11.5 points per year for Hispanic students, and 11.8 points per year for white students. Likewise, mean math scores improved over that period by an average of 27.1 points per year for black students, 26.6 points per year for Hispanic students, and 28.5 points per year for white students. Dr.

[1] The Freitas Report was prepared at the request of counsel for the Fisher Plaintiffs, prior to the report by Dr. Hendricks attached to the Fisher Plaintiffs' objection (which refers to the Freitas Report). Apparently, the Fisher Plaintiffs retained Dr. Hendricks after counsel received the Freitas report and determined that it did not support the argument he wished to make.

Freitas noted that, although achievement gaps between black/Hispanic students and white students existed at all grade levels compared in her study, the rates of improvement over the five-year period were "comparable" and "fundamentally equivalent" for the three racial groups. Again, the Freitas Report found no widening of the achievement gaps.

The Special Master has reviewed the Freitas Report and has found it to be credible and accurate. He has confirmed Dr. Freitas' conclusion that the study shows increases and decreases in student achievement over the studied period that are substantially the same for white, black, and Hispanic students.

The Fisher Plaintiffs, citing a report by their own expert, Robert Hendrick, Ph.D., contend the contrary: that the data in the Freitas Report actually shows a widening of the achievement gap over time. This is not true.

First, the Fisher Plaintiffs misstate Dr. Hendrick's conclusions. They assert that he found that, by seventh grade, "African American students are more than two (2) years behind Anglo students" (ECF 2276 at 6:28-7:3). In fact, Dr. Hendrick noted that the black students' seventh grade mean math score was somewhere between the mean score the white students had achieved in fifth grade and that they achieved in sixth grades (what he described as a 1.5-year gap). He does not substantiate his measurement of this "gap" over time but, regardless, he went on to note that "the academic gap in Math does show some tendency to decrease . . . in middle [school] grades."[2]

Second, and more important, the conclusions Dr. Hendrick put forward based on Dr. Freitas' data[3] are incorrect. Specifically, Dr. Hendrick opines that the achievement

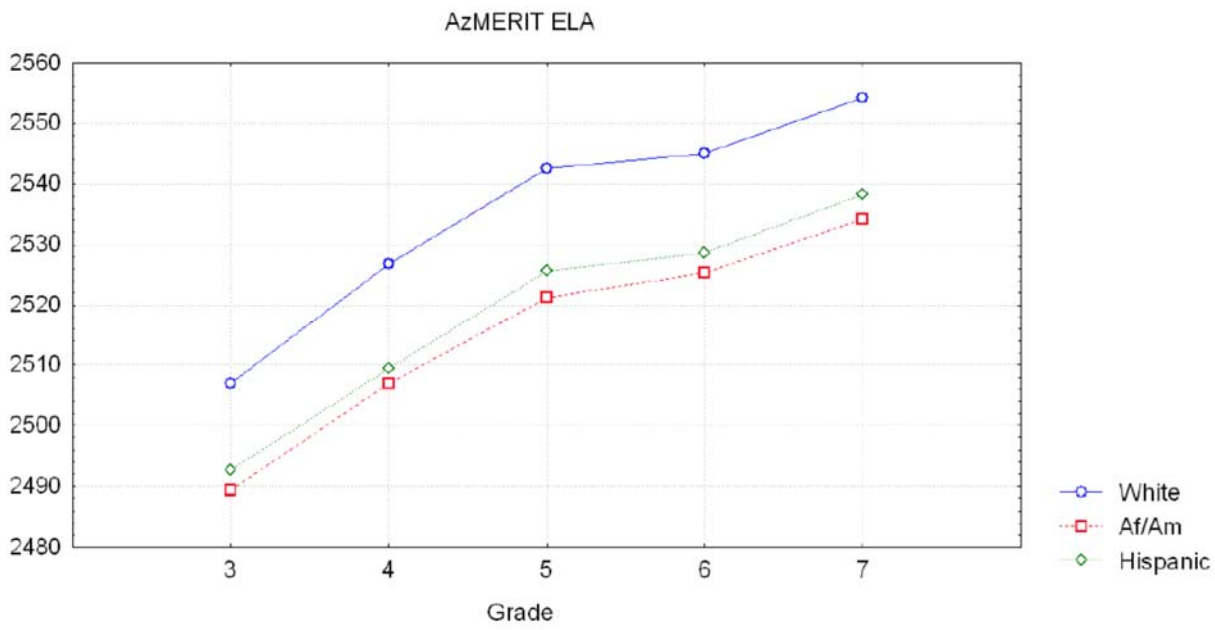
[2] Dr. Hendrick posits that there is a gap of more than two years in *ELA* achievement by seventh grade. That measurement is also not substantiated.

[3] It should be noted that Dr. Hendrick does not challenge the data underlying Dr. Freitas' report. He states that "the study is well conceived" and that the "accuracy of the mean scale score change is correct."

gap is increasing based on (a) his unsubstantiated claims about how many years the gap represents and (b) the fact that mean ELA scores increased over the studied period by 43 points for black students (from 2493.5 to 2536.5) and by 47 points for white students (from 2510.2 to 2557.2), while mean math scores increased by 108.5 points for black students (from 3506.6 to 3615.1) and by 114 points for white students (from 3529.2 to 3643.2). In short, although scores for both black and white students increased substantially over the four years, white students' scores increased by 4 more points for ELA and 5.5 more points for math.

Those differences are completely insignificant. According to Dr. Freitas, they are so small that they could be attributable to measurement errors or could be the result of aggregating mean scores with different sized populations. Increasing or decreasing 4 or 5 scale score points typically impacts proficiency level designations only marginally, unless they are on the cusp on another performance level. For reference, 4 or 5 points is likely the difference of one question on the test. It is inconceivable to think that a difference of one question per year could reflect the loss of a full year's worth of academic achievement over the five years studied, and Dr. Hendrick does not substantiate that assertion.

This conclusion is confirmed by a more recent study by Dr. Freitas, also involving cohorts, but this time using all students enrolled in the grade (without regard for continuous enrollment in TUSD during the period covered by the study). The results mirrored Dr. Freitas' first study, involving only those students continuously enrolled over the period: the achievement gap is present when students are first tested, it is persistent, and it does not widen materially:



The complete results are set out in Exhibit B attached hereto.

In conclusion, there is no evidence that the achievement gap in the District is widening, and the Freitas Report shows that, although black and Hispanic students score somewhat lower than white students do, the groups progress academically at essentially the same rates.

It must also be noted that the achievement gap is undisputedly a national phenomenon, not one specific to the District. School districts across the country have been grappling with the achievement gap for decades. *See, e.g.*, *School Composition and the Black-White Achievement Gap*, NAT'L CTR. FOR EDUC. STATISTICS (June 2015), https://nces.ed.gov/nationsreportcard/subject/studies/pdf/school_composition_and_the_bw_achievement_gap_2015.pdf.

Moreover, the achievement gap — which is already present when students enter kindergarten — is largely, and perhaps primarily, influenced by socioeconomic factors. *See, e.g.*, Roland G. Fryer & Steven D. Levitt, *Falling Behind: New evidence on the black-white achievement gap*, EDUCATION NEXT (Fall 2004, Vol. 4, No. 4), *available at*

https://www.educationnext.org/fallingbehind ("[A]djusting the data for the effects of socioeconomic status reduces the estimated racial gaps in test scores by more than 40 percent in math and more than 66 percent in reading."); *Hoots v. Pennsylvania*, 118 F. Supp. 2d 577, 600 (W.D. Pa. 2000) ("Differences in the socioeconomic backgrounds of black and white students are reflected nationally in an achievement gap. This gap appears at all ages in virtually every school system throughout the United States in reading, mathematics and science."); *Coal. to Save Our Children v. State Bd. of Educ. of State of Del.*, 90 F.3d 752, 778-79 (3d Cir. 1996) (noting that "pervasive socioeconomic conditions . . . account for discrepancies among the races in educational performance" and that "[b]ecause the environment outside school is so strong, cumulative, and varied, schools cannot overcome such environmental/differences among children").

In fact, as the Special Master has noted, "[n]umerous researchers have studied how much of the variance in student achievement can be accounted for by measurable variations in school characteristics. The consensus is that schools, on average, account for less than a third of the variance in student achievement." (ECF 2014 at 9-10.)

Achievement discrepancies that (a) exist nationwide nationwide, (b) are caused by socioeconomic factors for which the District is not responsible, and (c) are already present by the time children begin their education in the District as kindergarteners, are simply not problems that are tied to prior segregative conduct by the District. Although the District is vigorously combatting the achievement gap and making strides to reduce it, the continuing existence of the gap is not a fact that may be held against the District in determining whether unitary status is appropriate.

EXHIBIT A

Introduction

This study reviewed longitudinal data on Tucson Unified School District (TUSD) student academic performance on the Arizona Measurement of Educational Readiness to Inform Teaching or AzMERIT, disaggregated by grade-level and by ethnicity. Student performance in AzMERIT English Language Arts (ELA) and Mathematics (Math) was examined for students who were continuously enrolled in TUSD from the 3rd grade through the 7th grade beginning in the SY 2014-2015 and continuing through the SY 2018-2019. This timeframe captures the cohort of TUSD students who were assessed with the first implementation of the 3rd Grade AzMERIT during SY 2014-2015 and follows them over next five school years through the SY 2018-2019. To be included in this longitudinal cohort, students needed 5 years of AzMERIT results in ELA and/or Math.

Comparison of the AzMERIT Percent Proficiency by Grade and Ethnicity

In the SY 2014-2015, 3,743 TUSD students took the 3rd grade AzMERIT ELA exam, of whom 2,062 remained continuously enrolled in TUSD schools over the next five school years and took the AzMERIT each spring. In SY 2014-2015, 3,762 students took the 3rd grade AzMERIT Math exam and 2,086 of those students remained in the school district over this five-year span with AzMERIT scores each year. Please see Appendix 1 for a breakdown of this data by grade and subject. Among this cohort, ELA mean percent proficiency increased from 3rd grade (32.8%) to 4th grade (39.9%), then declined in both 5th (35.2%) and 6th grades (26.0%) and finally improved somewhat in the 7th grade

(29.3%). On the AzMERIT math exam, 3rd grade (34.9%) and 4th grade (34.8%) mean percent proficiency was very similar. In 5th grade, scores increased (41.0%), and then declined in both 6th grade (27.8%) and 7th grades (24.7%). Overall, cohort performances of African-American, Asian/PI-American, Hispanic, Multi-Racial, Native-American and White students conformed to this pattern of improvement in the elementary grades then a decline in the middle school grades in the mean percent proficiency.

Scale Score Analysis using BOX and WHISKERS

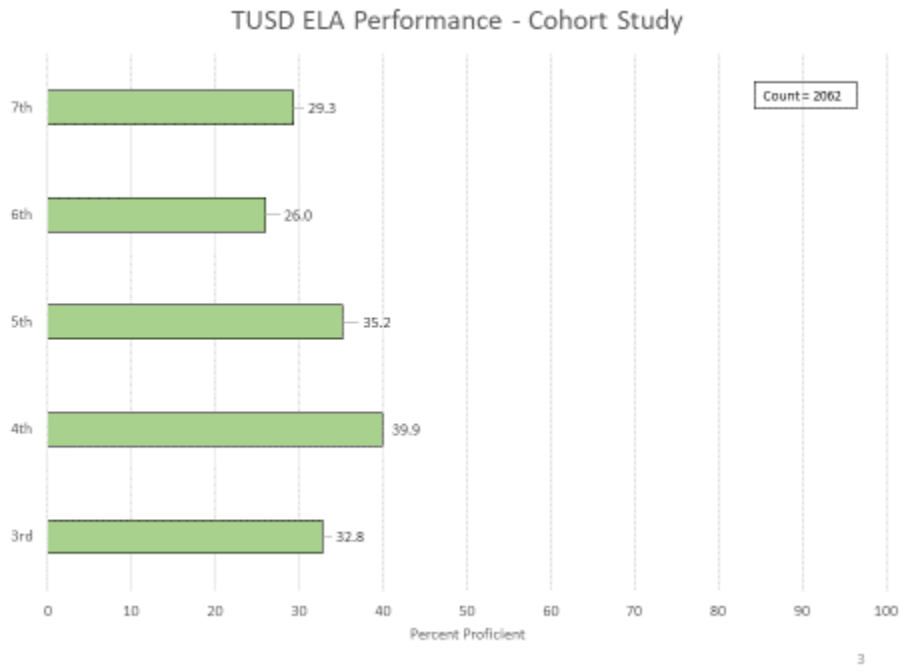
The Box and Whiskers analysis compared ELA and Math AzMERIT performance among this cohort using median scale scores. Please see Appendix 2 for a breakdown of the results by grade and subject. This view illustrates that African-American and Hispanic students performed similarly in their score distributions and median scale scores. Additionally, in the bottom left corner of each grade level, a t-test was conducted to assess if the mean scale scores for each ethnicity was significantly different when compared to White performance within each grade. For all grade-level tests, African-American and Hispanic students' mean scale scores were significantly lower than those of White students. However, this t-test data also revealed an interesting trend across grades when comparing the mean ELA scale scores. African American, Hispanic, and White students all showed very similar changes in the mean scale score year over year for 5 years. The average mean ELA scale score difference over 5 years for African-American was 10.8. Hispanic and White students ELA scale score differences were fundamentally equivalent (11.5 points and 11.8 points respectively) to African American mean ELA scale score differences. In other words, change over time in terms of mean scale scores does not vary much by ethnicity.

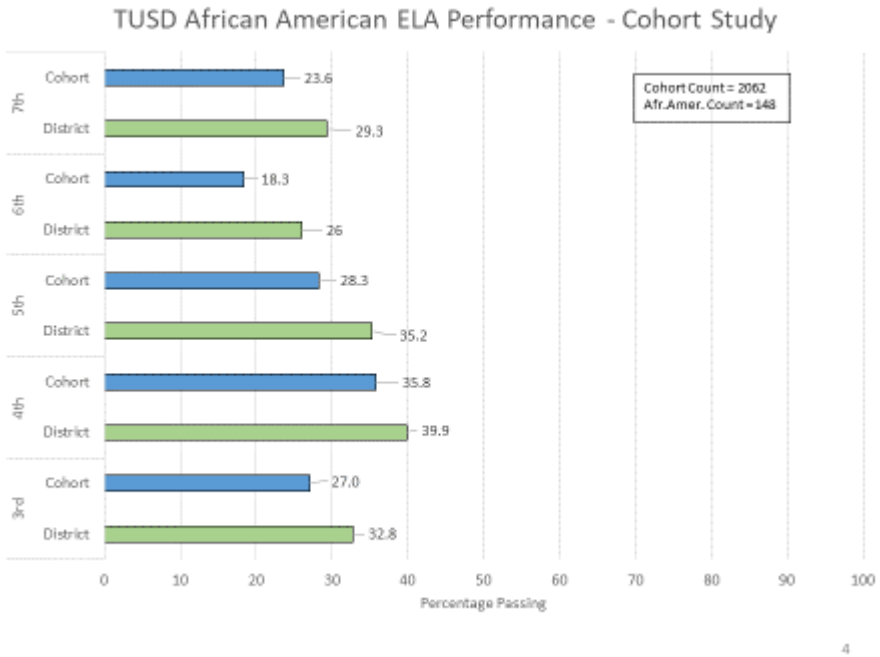
When African-American and Hispanic students' math scale scores were compared against White students, African-American and Hispanic students' mean scale scores were also statistically lower than White students across all grade-levels. Similar to the trends that were evident with ELA scores, math scale score change over time was equivalent across ethnicities. African-American (27.1 points) and Hispanic (26.6 points) students average yearly change over 5 years in math scale scores were comparable to that of White students (28.5 points).

Summary

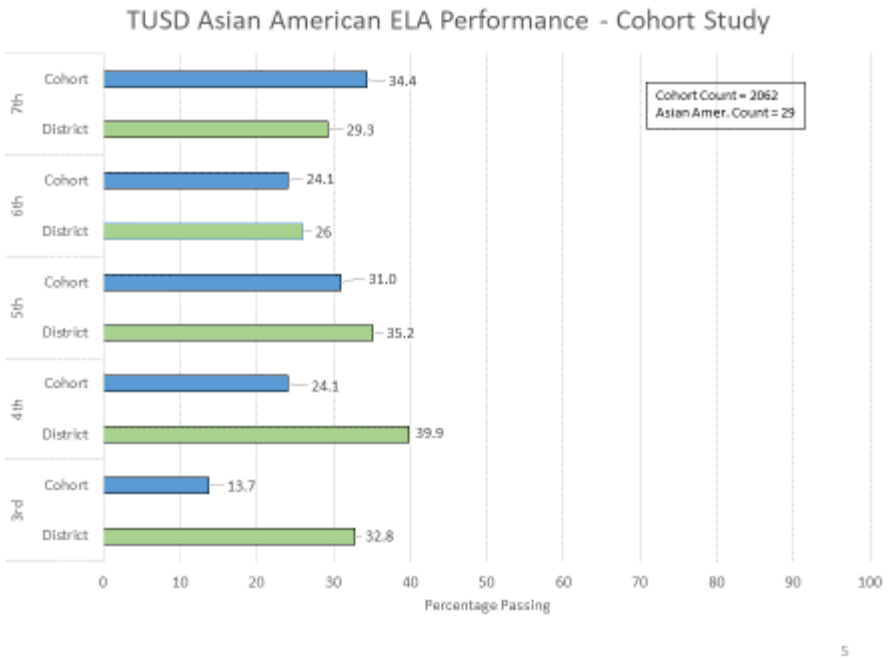
In summary, by 3rd grade, an academic gap already exists in percent proficiency between African American and Hispanic students when compared to White students. The gap that was evident in 3rd grade between African-American and Hispanic students when compared to White students persisted to the 7th grade in both ELA & Math. In both subjects, each ethnicity show the same trend of overall increases in elementary school followed by decreases in middle school in percent proficiency. The Box and Whiskers analysis of AzMERIT scale scores in ELA & Math demonstrates that African-American and Hispanic students' performance is statistically significantly lower than White students across all grade-levels. However, the annual yearly change in mean scale scores of African-American and Hispanic students is comparable to White students in both ELA & Math. Additionally, it appears that the gap did not dramatically increase or decrease because the mean scale score changes year over year between the different ethnicities were fundamentally equivalent.

Appendix 1


TUSD ELA Performance - Cohort Study
Count = 2062
7th
29.3
6th
26.0
5th
35.2
4th
39.9
3rd
32.8
0
10
20
30
40
50
60
70
80
90
100
Percent Proficient
3


TUSD African American ELA Performance - Cohort Study
Cohort Count = 2062
Afr.Amer. Count = 148
7th
Cohort
23.6
District
29.3
6th
Cohort
18.3
District
26
5th
Cohort
28.3
District
35.2
4th
Cohort
35.8
District
39.9
3rd
Cohort
27.0
District
32.8
0
10
20
30
40
50
60
70
80
90
100
Percentage Passing
4

TUSD COHORT STUDY OVER 5 YEARS USING AZMERIT SCORES 2014-15 TO 2018-19 BROKEN OUT BY ETHNICITY



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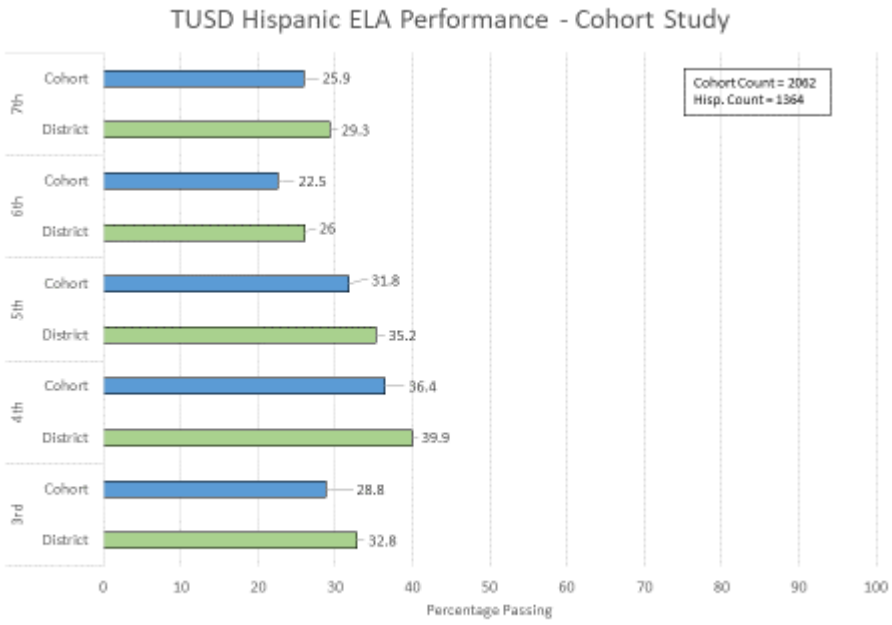

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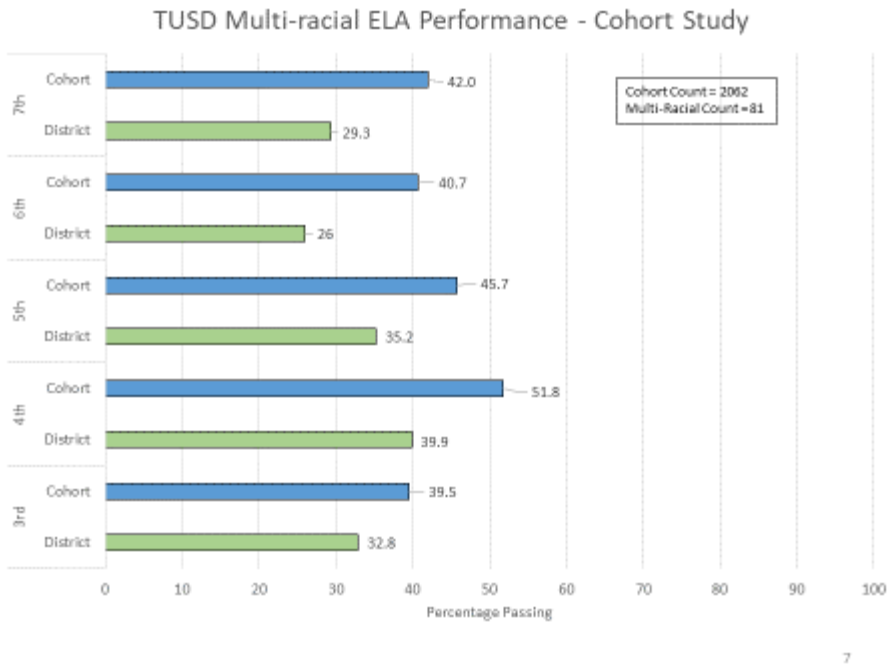
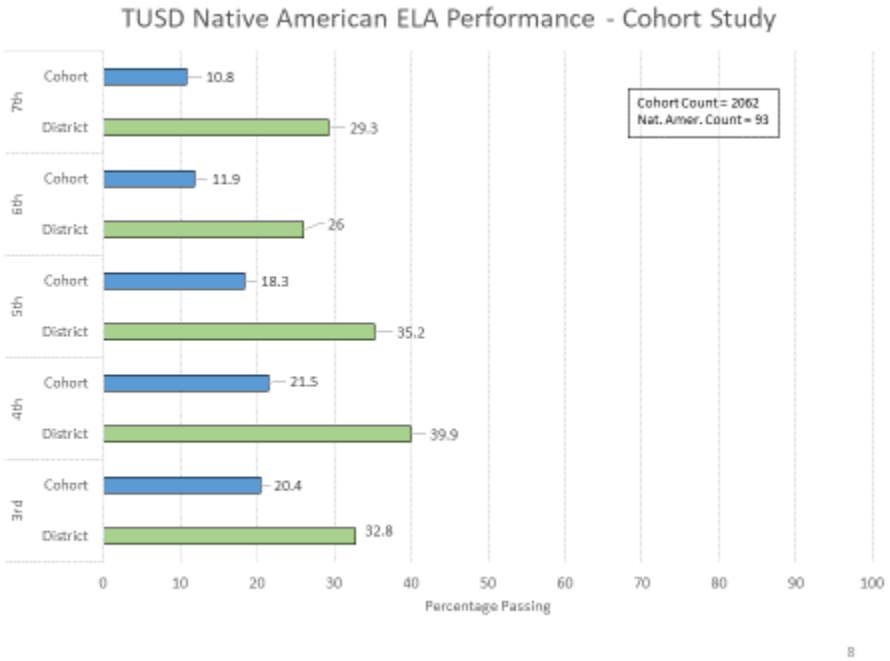

TUSD Multi-racial ELA Performance - Cohort Study
Cohort Count = 2062
Multi-Racial Count = 81
7th
Cohort
42.0
District
29.3
6th
Cohort
40.7
District
26
5th
Cohort
45.7
District
35.2
4th
Cohort
51.8
District
39.9
3rd
Cohort
39.5
District
32.8
0
10
20
30
40
50
60
70
80
90
100
Percentage Passing

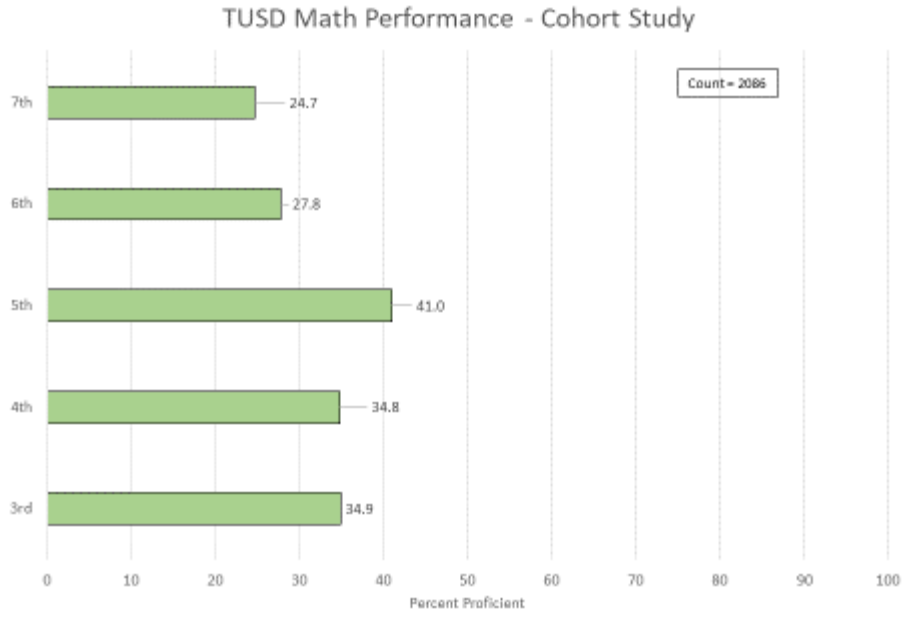
7


TUSD Native American ELA Performance - Cohort Study
Cohort Count = 2062
Nat. Amer. Count = 93
7th
Cohort
10.8
District
29.3
6th
Cohort
11.9
District
26
5th
Cohort
18.3
District
35.2
4th
Cohort
21.5
District
39.9
3rd
Cohort
20.4
District
32.8
0
10
20
30
40
50
60
70
80
90
100
Percentage Passing

8

TUSD COHORT STUDY OVER 5 YEARS USING AZMERIT SCORES 2014-15 TO 2018-19 BROKEN OUT BY ETHNICITY

9



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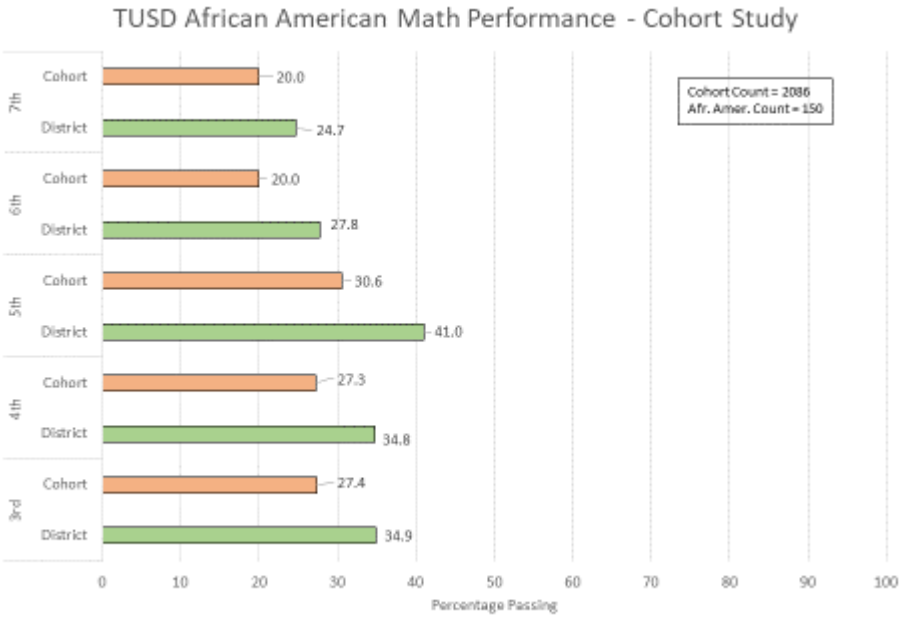
TUSD COHORT STUDY OVER 5 YEARS USING AZMERIT SCORES 2014-15 TO 2018-19 BROKEN OUT BY ETHNICITY



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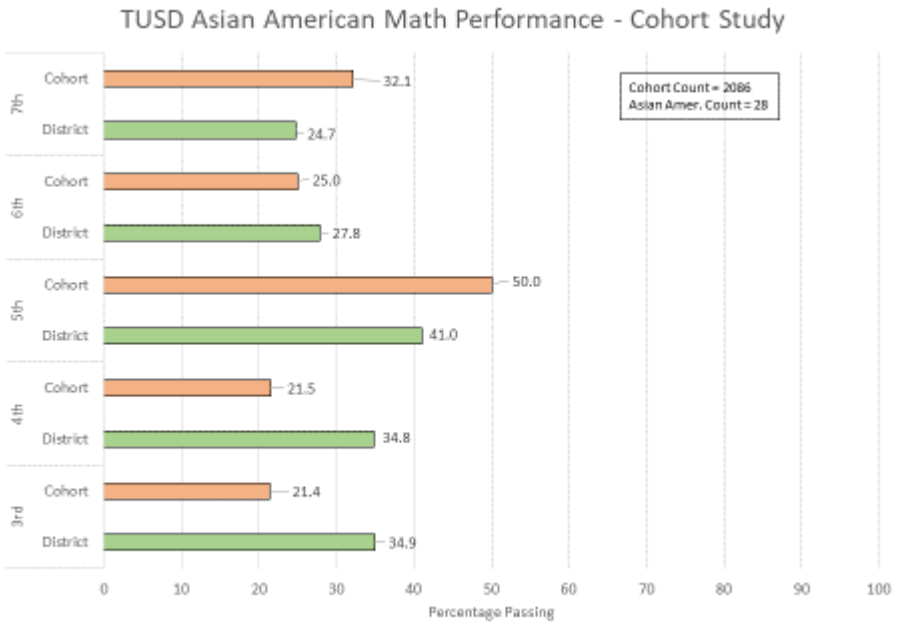
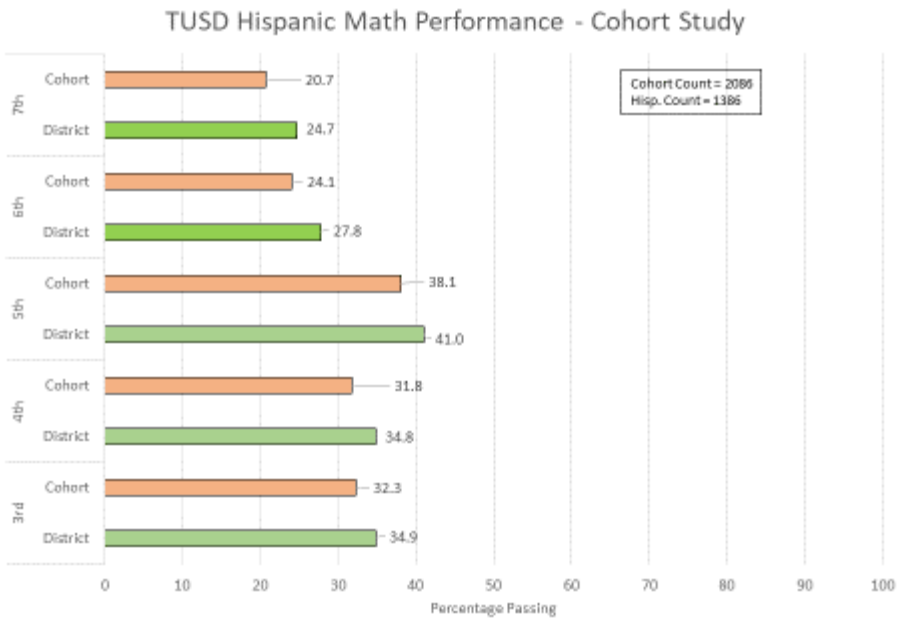


13

TUSD COHORT STUDY OVER 5 YEARS USING AZMERIT SCORES 2014-15 TO 2018-19 BROKEN OUT BY ETHNICITY



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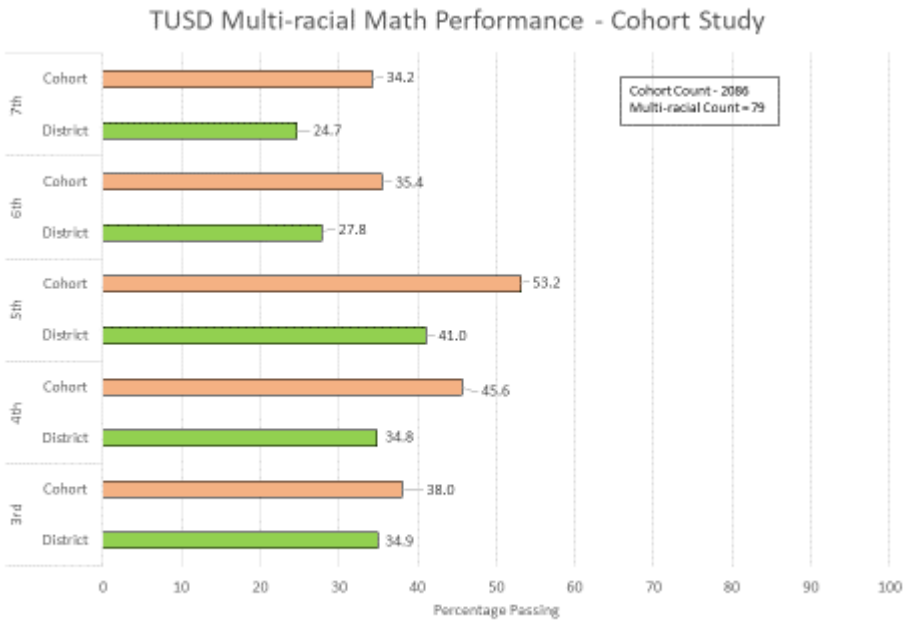

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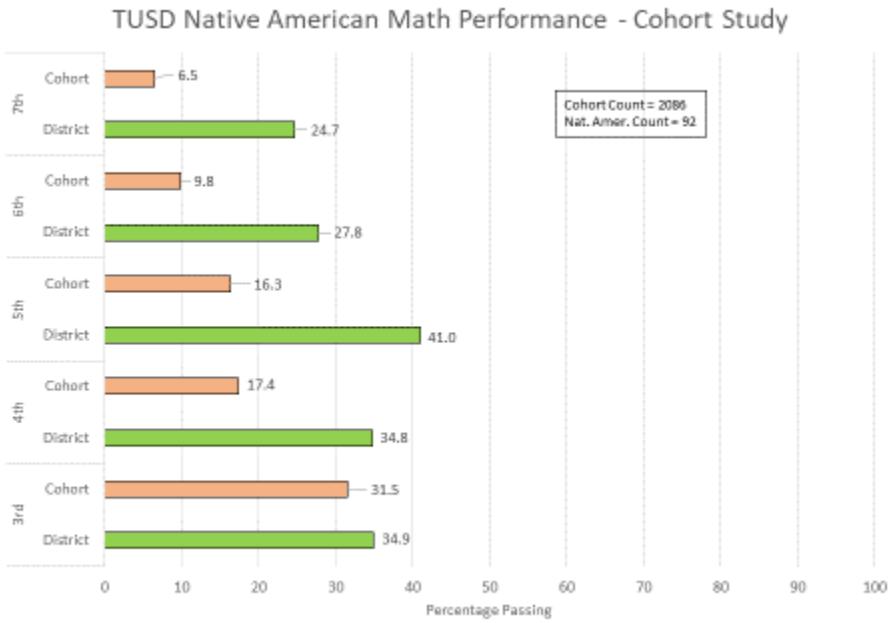
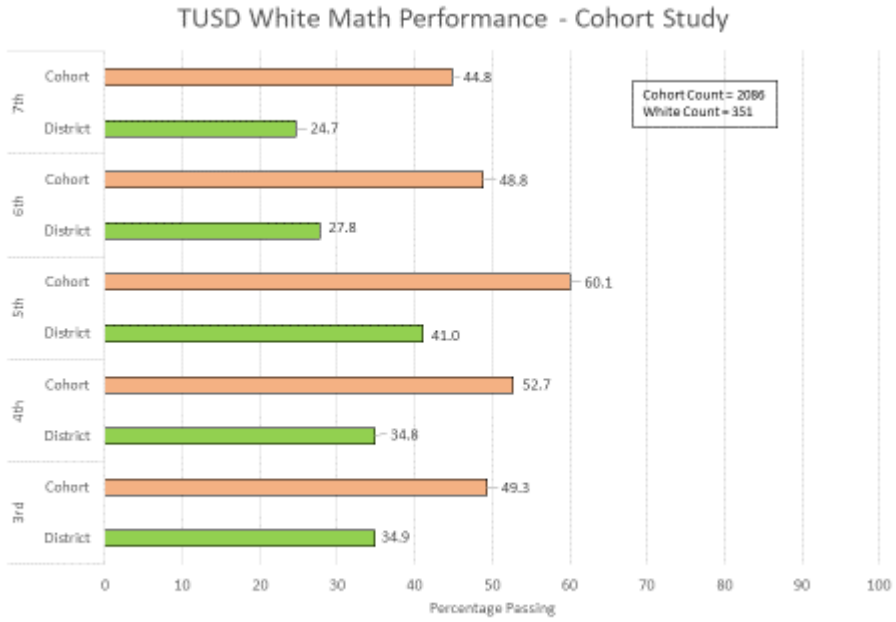
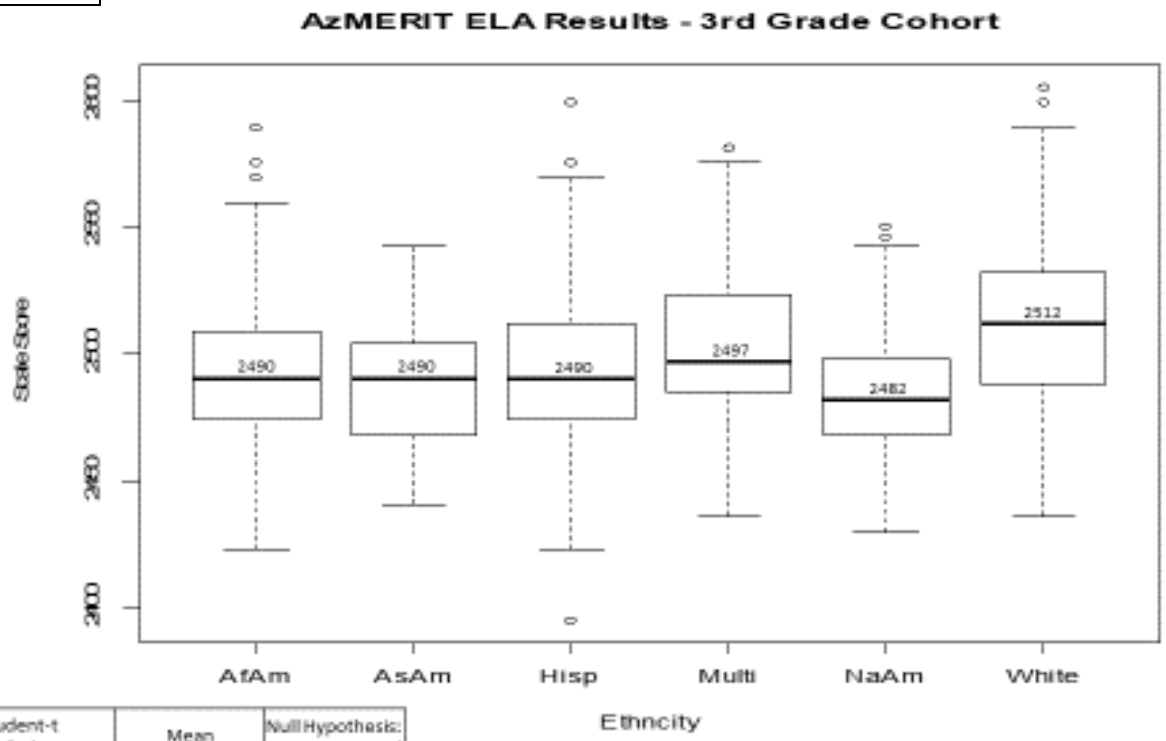

TUSD Native American Math Performance - Cohort Study
Cohort Count = 2086
Nat. Amer. Count = 92
7th
Cohort 6.5
District 24.7
6th
Cohort 9.8
District 27.8
5th
Cohort 16.3
District 41.0
4th
Cohort 17.4
District 34.8
3rd
Cohort 31.5
District 34.9
0 10 20 30 40 50 60 70 80 90 100
Percentage Passing

16


TUSD White Math Performance - Cohort Study
Cohort Count = 2086
White Count = 351
7th
Cohort 44.8
District 24.7
6th
Cohort 48.8
District 27.8
5th
Cohort 60.1
District 41.0
4th
Cohort 52.7
District 34.8
3rd
Cohort 49.3
District 34.9
0 10 20 30 40 50 60 70 80 90 100
Percentage Passing

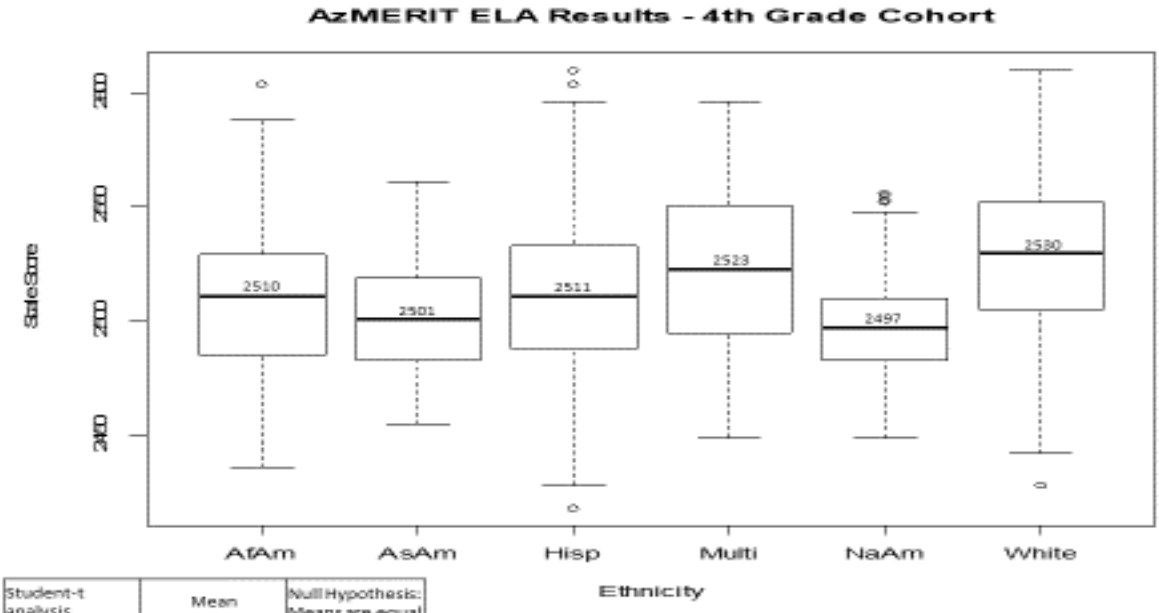
17

Appendix 2



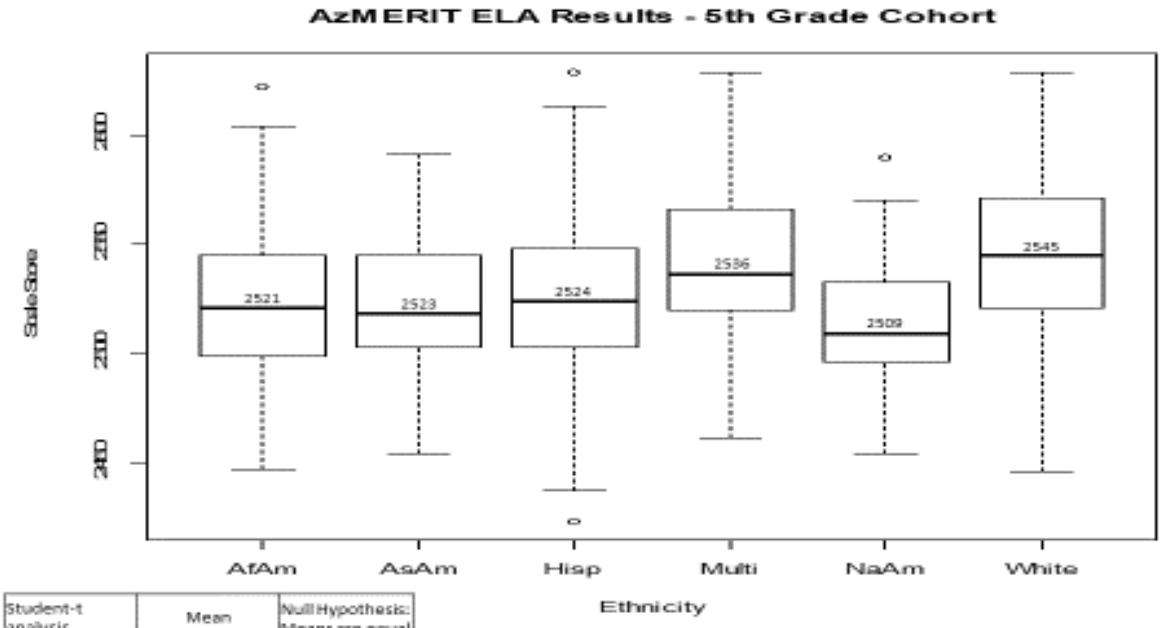
Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	2493.5 to 2510.1	Reject
AsAm to White	2488.2 to 2510.0	Reject
Hisp to White	2493.8 to 2510.0	Reject
Multi to White	2504.6 to 2510.0	Can't Reject
NaAm to White	2485.9 to 2510.0	Reject

3



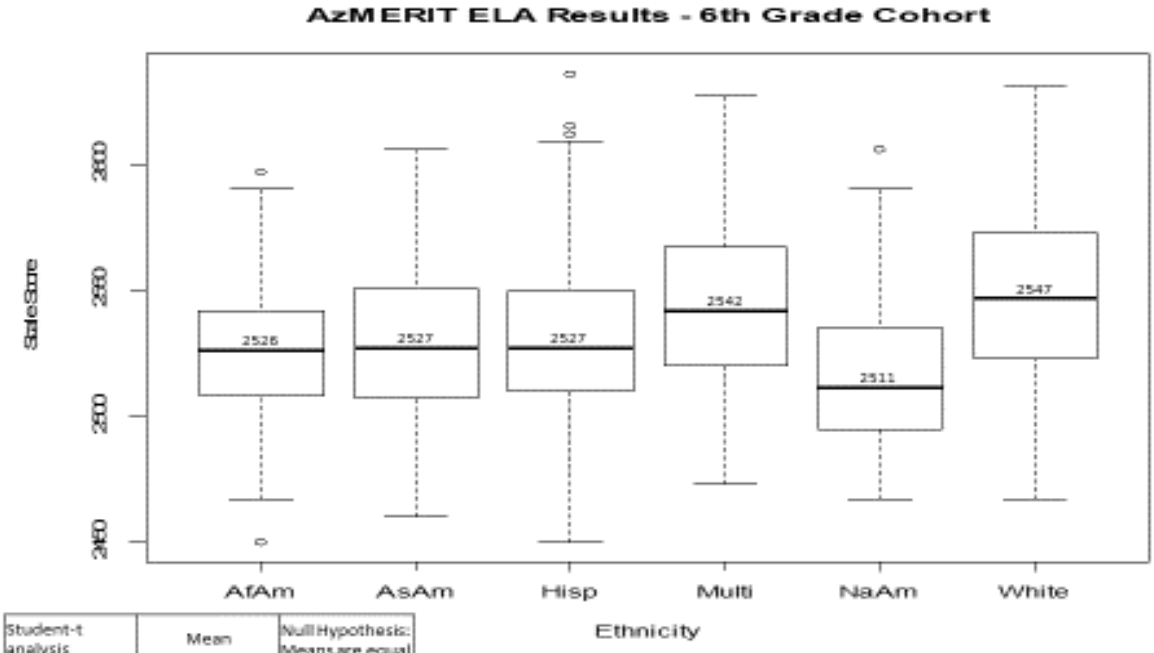
Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	2509.5 to 2529.4	Reject
AsAm to White	2501.6 to 2529.4	Reject
Hisp to White	2510.6 to 2529.4	Reject
Multi to White	2524.1 to 2529.4	Can't Reject
NaAm to White	2500.0 to 2529.4	Reject

4



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	2523.4 to 2544.8	Reject
AsAm to White	2523.0 to 2544.8	Reject
Hisp to White	2527.1 to 2544.8	Reject
Multi to White	2541.5 to 2544.8	Can't Reject
NaAm to White	2513.7 to 2544.8	Reject

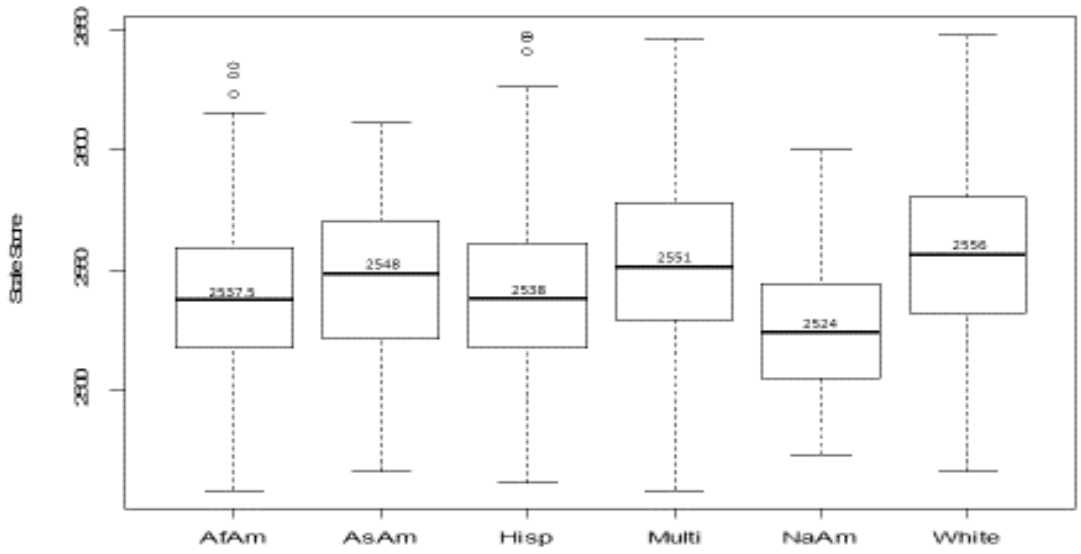
5



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	2527.2 to 2546.6	Reject
AsAm to White	2530.1 to 2546.6	Reject
Hisp to White	2530.0 to 2546.6	Reject
Multi to White	2544.3 to 2546.6	Can't Reject
NaAm to White	2516.7 to 2546.6	Reject

6

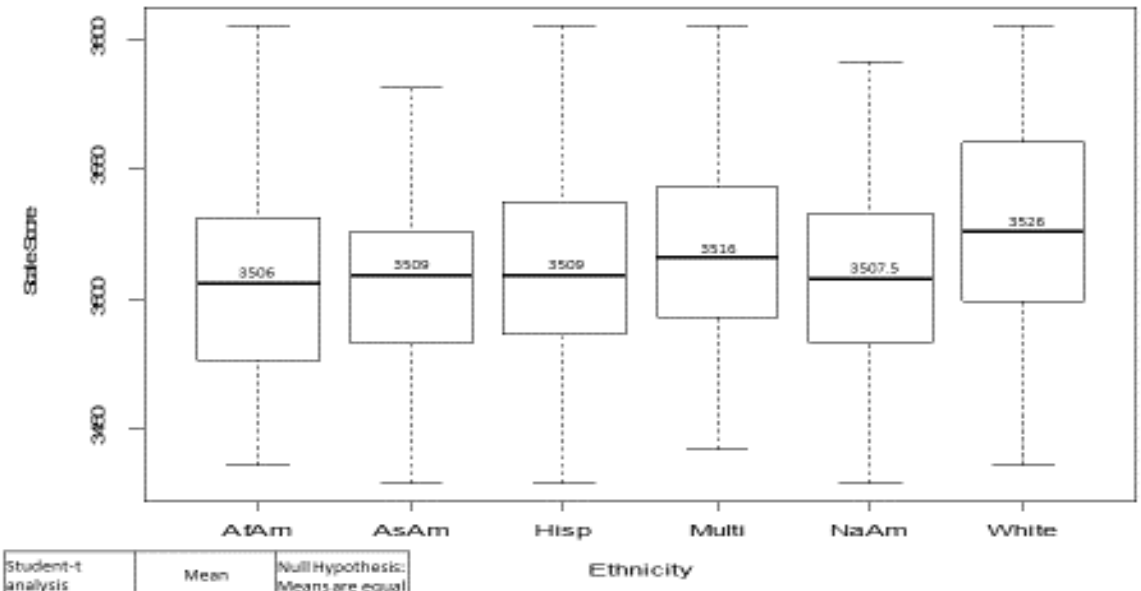
AzMERIT ELA Results - 7th Grade Cohort



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	2536.5 to 2557.2	Reject
AsAm to White	2546.2 to 2557.2	Can't Reject
Hisp to White	2539.7 to 2557.2	Reject
Multi to White	2552.9 to 2557.2	Can't Reject
NaAm to White	2525.7 to 2557.2	Reject

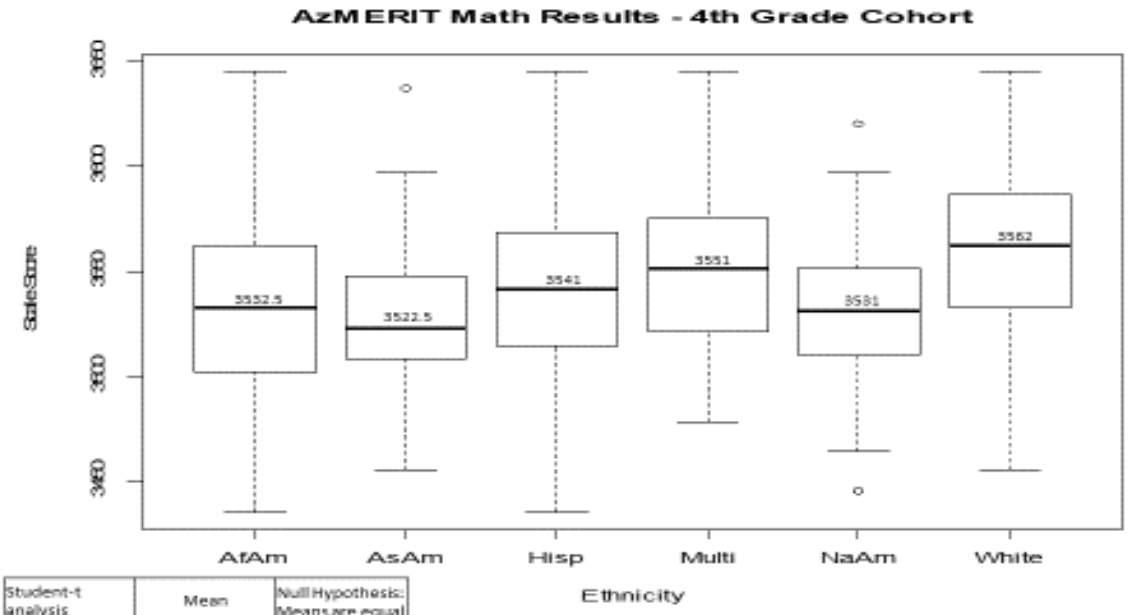
7

AzMERIT Math Results - 3rd Grade Cohort



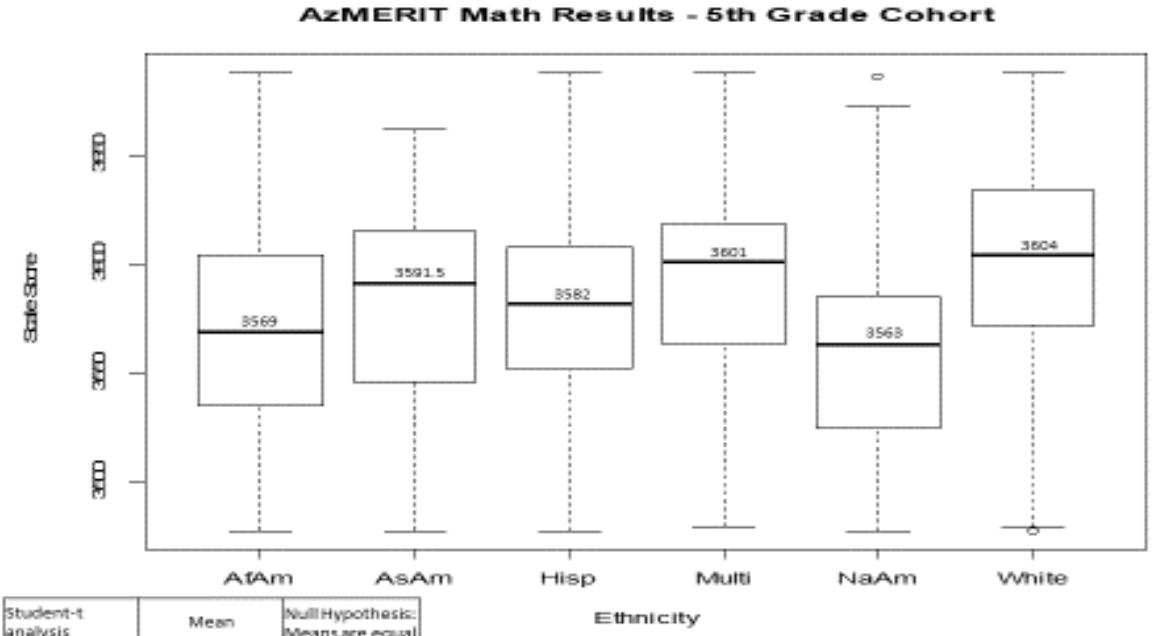
Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	3506.6 to 3529.2	Reject
AsAm to White	3508.1 to 3529.2	Reject
Hisp to White	3512.1 to 3529.2	Reject
Multi to White	3521.0 to 3529.2	Can't Reject
NaAm to White	3508.7 to 3529.2	Reject

9



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	3532.4 to 3559.5	Reject
AsAm to White	3531.1 to 3559.5	Reject
Hisp to White	3540.6 to 3559.5	Reject
Multi to White	3552.0 to 3559.5	Can't Reject
NaAm to White	3529.3 to 3559.5	Reject

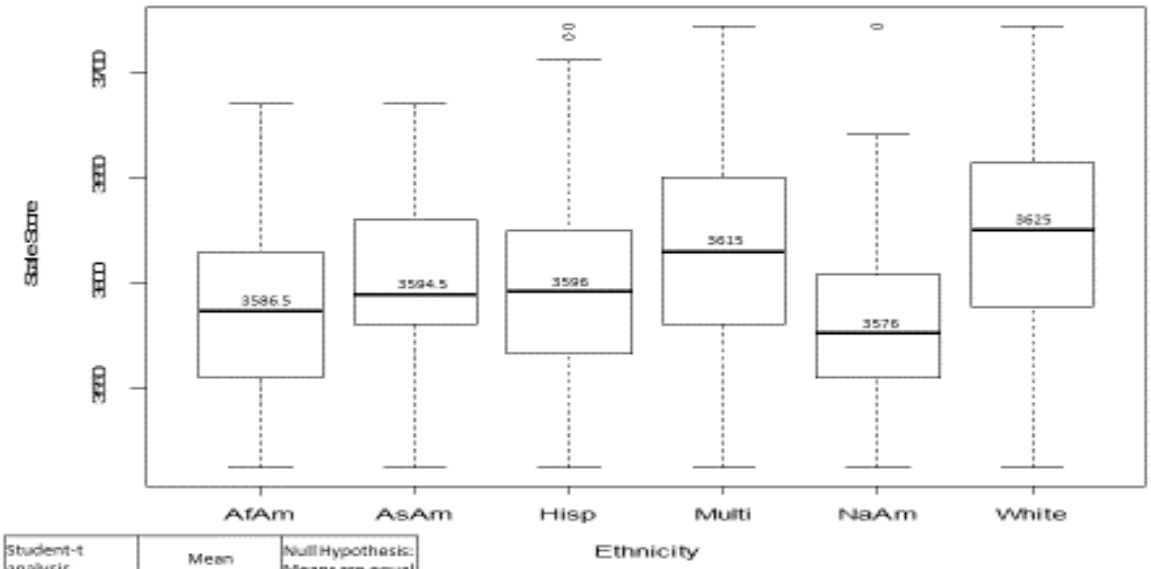
10



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	3570.6 to 3601.5	Reject
AsAm to White	3586.0 to 3601.5	Cannot Reject
Hisp to White	3580.0 to 3601.5	Reject
Multi to White	3593.9 to 3601.5	Can't Reject
NaAm to White	3558.1 to 3601.5	Reject

11

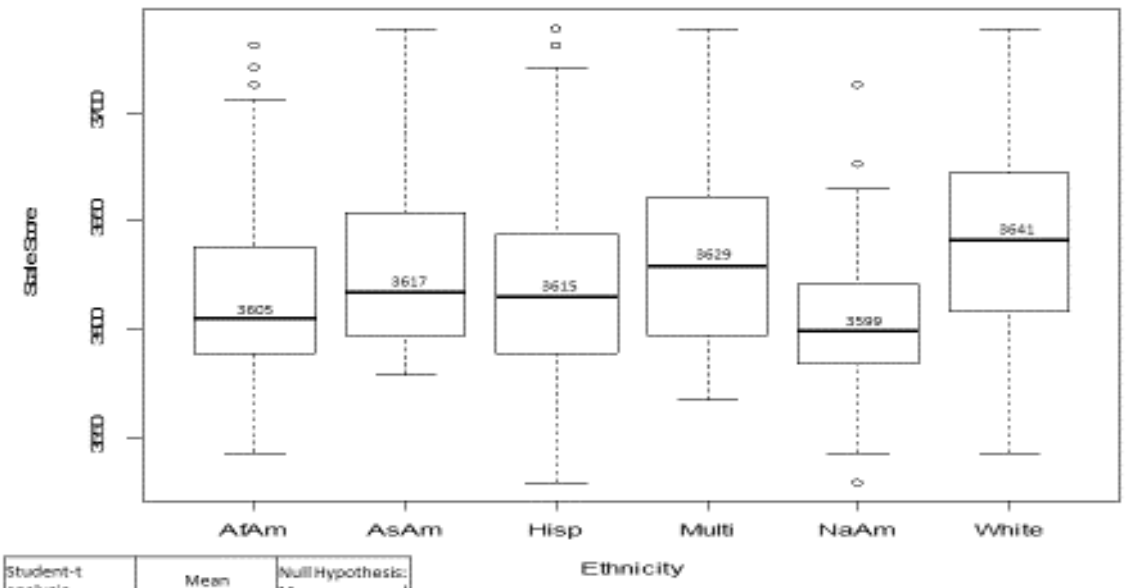
AzMERIT Math Results - 6th Grade Cohort



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	3589.5 to 3622.1	Reject
AsAm to White	3600.7 to 3622.1	Reject
Hisp to White	3596.3 to 3622.1	Reject
Multi to White	3614.9 to 3622.1	Can't Reject
NaAm to White	3580.1 to 3622.1	Reject

12

AzMERIT Math Results - 7th Grade Cohort



Student-t analysis	Mean	Null Hypothesis: Means are equal
AfAm to White	3615.1 to 3643.2	Reject
AsAm to White	3629.1 to 3643.2	Cannot Reject
Hisp to White	3618.3 to 3643.2	Reject
Multi to White	3633.7 to 3643.2	Can't Reject
NaAm to White	3602.7 to 3643.2	Reject

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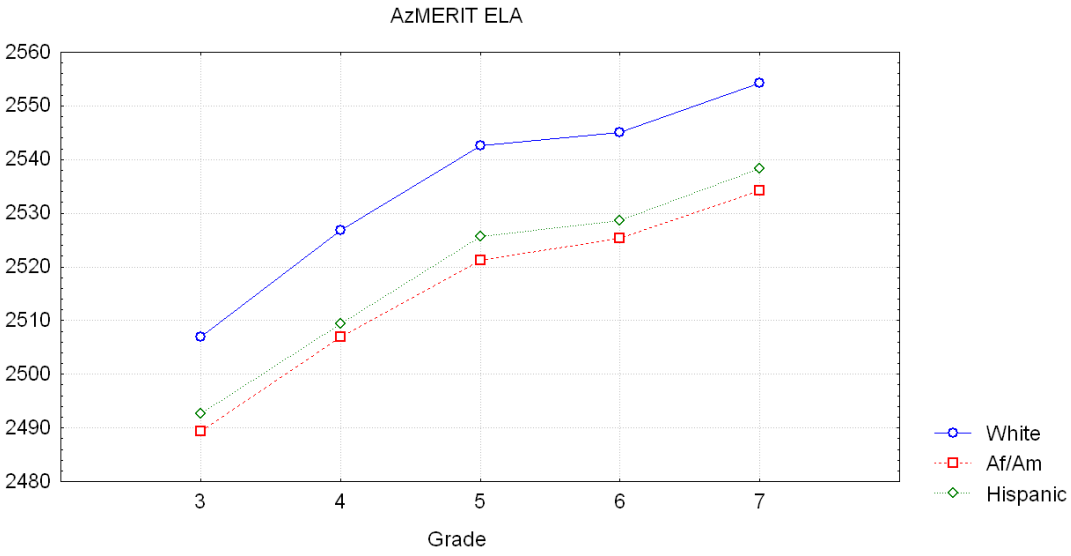
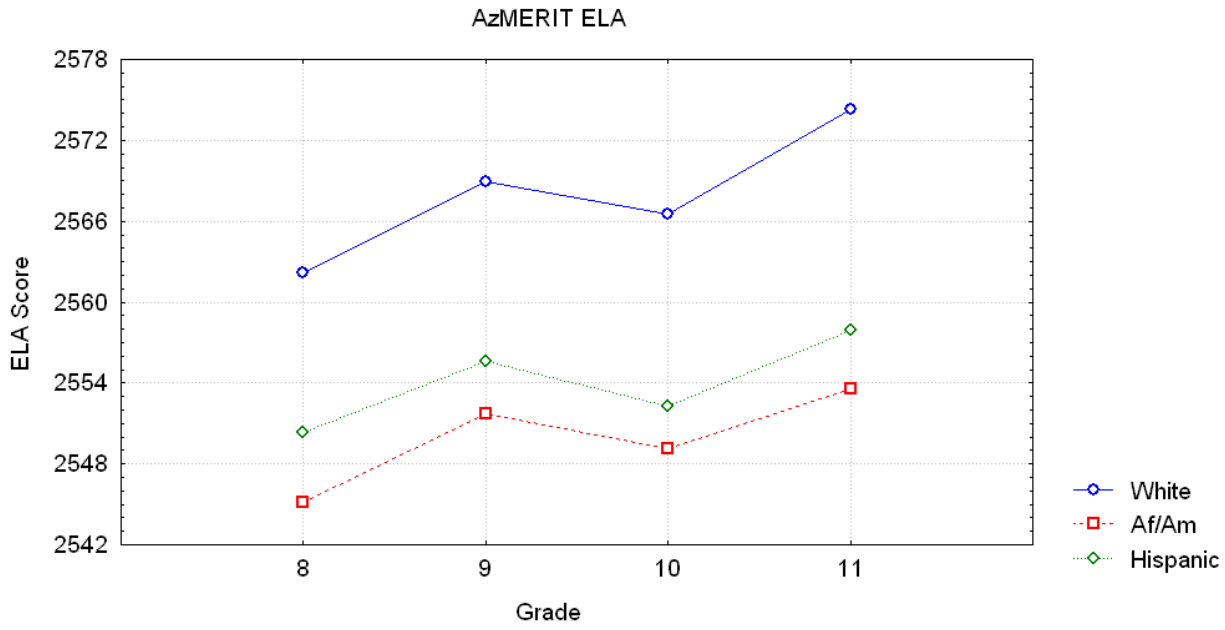
EXHIBIT B



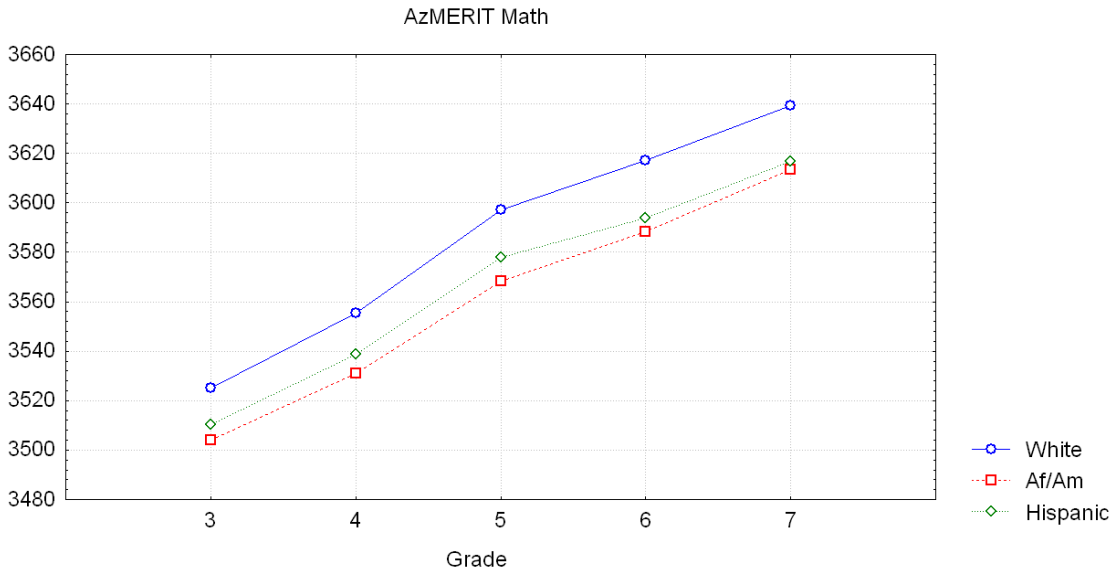
Summary Table of Means
Smallest N for any variable: 2122

Ethnicity	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7	
	Means	N	Means	N	Means	N	Means	N	Means	N
White	2506.921	747	2526.788	643	2542.578	561	2545.137	445	2554.320	403
Af/Am	2489.449	312	2506.933	252	2521.187	235	2525.349	192	2534.194	175
Hispanic	2492.631	2314	2509.375	2045	2525.600	1912	2528.567	1639	2538.400	1544
All Groups	2495.502	3373	2512.974	2940	2528.734	2708	2531.536	2276	2541.076	2122



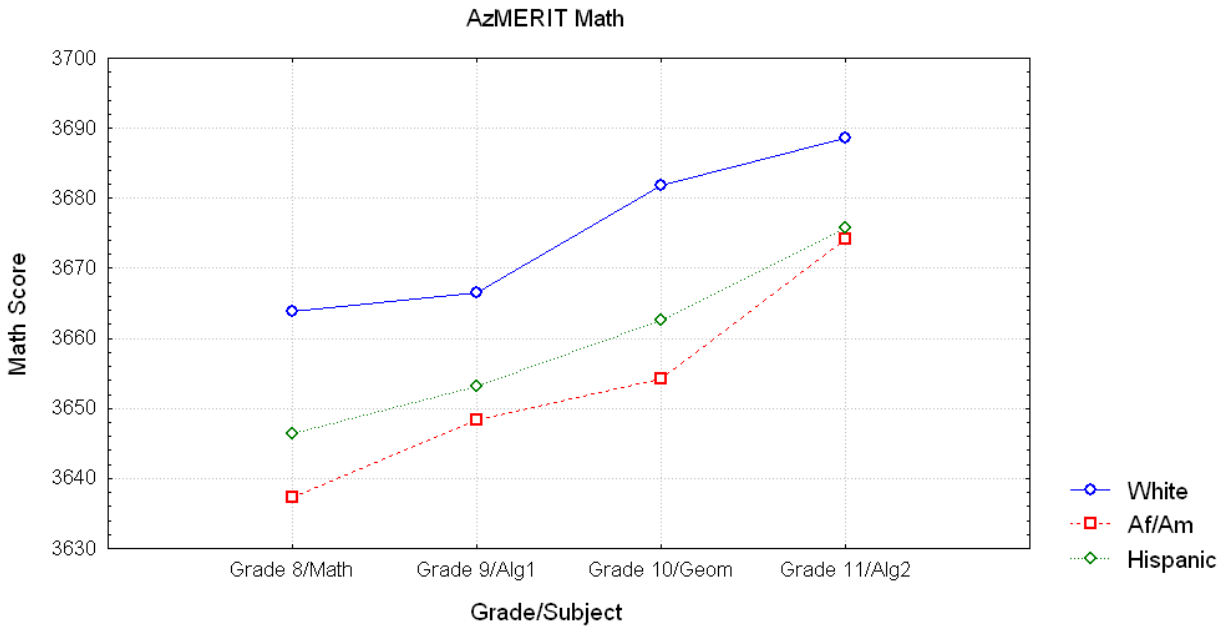
Summary Table of Means (azmerit_gaps.sta)
Smallest N for any variable: 1755

Ethnicity	Grade 8		Grade 9		Grade 10		Grade 11	
	Means	N	Means	N	Means	N	Means	N
White	2562.164	657	2568.963	509	2566.523	428	2574.336	393
Af/Am	2545.123	260	2551.686	188	2549.176	148	2553.534	133
Hisp	2550.360	2116	2555.607	1574	2552.298	1363	2557.949	1229
All Groups	2552.468	3033	2558.276	2271	2555.200	1939	2561.284	1755



Summary Table of Means (azmerit_gaps.sta)
Smallest N for any variable: 2133

	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7	
	Means	N	Means	N	Means	N	Means	N	Means	N
White	3524.960	749	3555.346	650	3597.121	563	3617.007	440	3639.146	404
Af/Am	3503.889	315	3530.929	252	3568.213	235	3588.332	187	3613.410	178
Hispanic	3510.203	2327	3538.924	2040	3577.797	1919	3593.935	1650	3616.625	1551
All Groups	3512.876	3391	3541.867	2942	3580.972	2717	3597.933	2277	3620.623	2133



Summary Table of Means (azmerit_gaps.sta)
Smallest N for any variable: 1248

Ethnicity	Math 8		Algebra 1		Geometry		Algebra 2	
	Means	N	Means	N	Means	N	Means	N
White	3663.927	660	3666.481	378	3681.784	315	3688.525	223
Af/Am	3637.226	261	3648.442	165	3654.233	129	3674.172	99
Hisp	3646.392	2127	3653.138	1335	3662.639	1129	3675.722	926
All Groups	3649.404	3048	3655.411	1878	3665.783	1573	3677.887	1248