District of Columbia
Office of the State Superintendent of Education

2019 STAR Framework Brief: Appendices

November 26, 2019, updated December 13, 2019

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Appendix A - Overall Distributions

Distributions of STAR Ratings by School Framework

Figure 1 shows the distribution of framework ratings across all public schools with an Elementary School framework (with and without pre-kindergarten). Since 2018, the number of schools earning five star ratings increased from eight to 11, the number of schools earning four star ratings increased from 32 to 44, the number of schools earning three star ratings decreased from 51 to 35, the number of schools earning two star ratings increased from 32 to 37, and the number of schools earning one star ratings remained the same at 11.

Figure 1

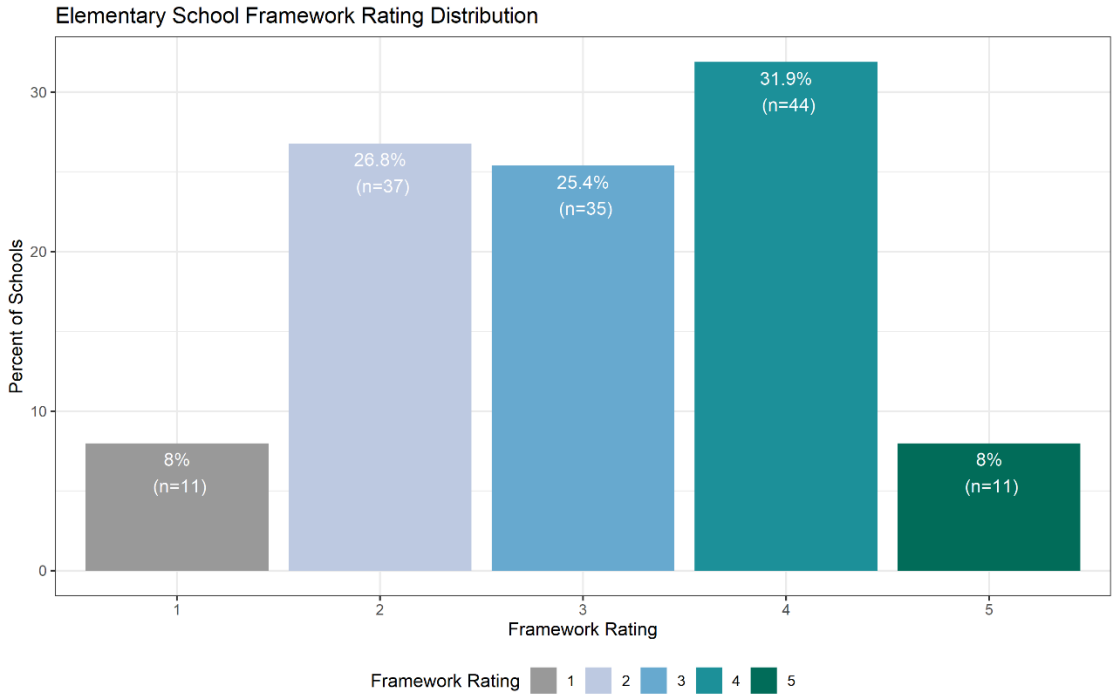
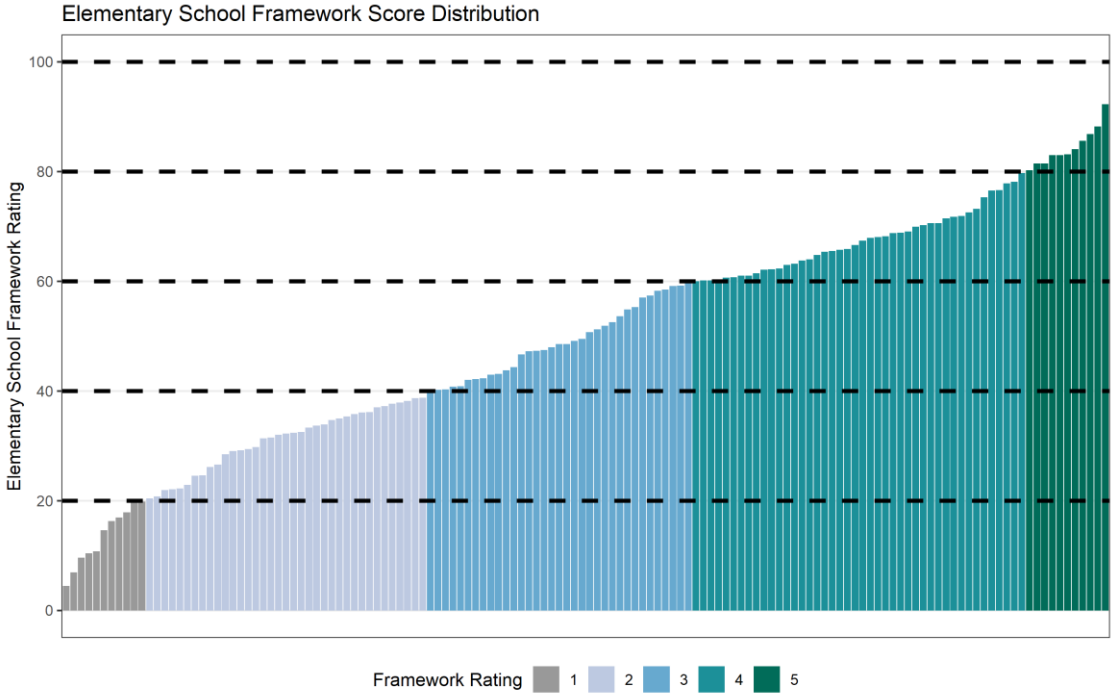


Figure 2 shows the distribution of framework scores in the Elementary School framework. Each bar represents the Elementary framework score for an individual school. The color of each bar corresponds to each framework rating, one through five, with the dotted lines representing the framework score cut points for each framework rating.

Figure 2



Figures 3 and 4 show the distribution of framework ratings and framework scores for all schools with a Middle School framework, respectively. Since 2018, the number of schools earning five star ratings increased from eight to ten, the number of schools earning four star ratings increased from 14 to 18, the number of schools earning three star ratings decreased from 26 to 23, the number of schools earning two star ratings decreased from 18 to 16, and the number of schools earning one star ratings remained the same at six.

Figure 3

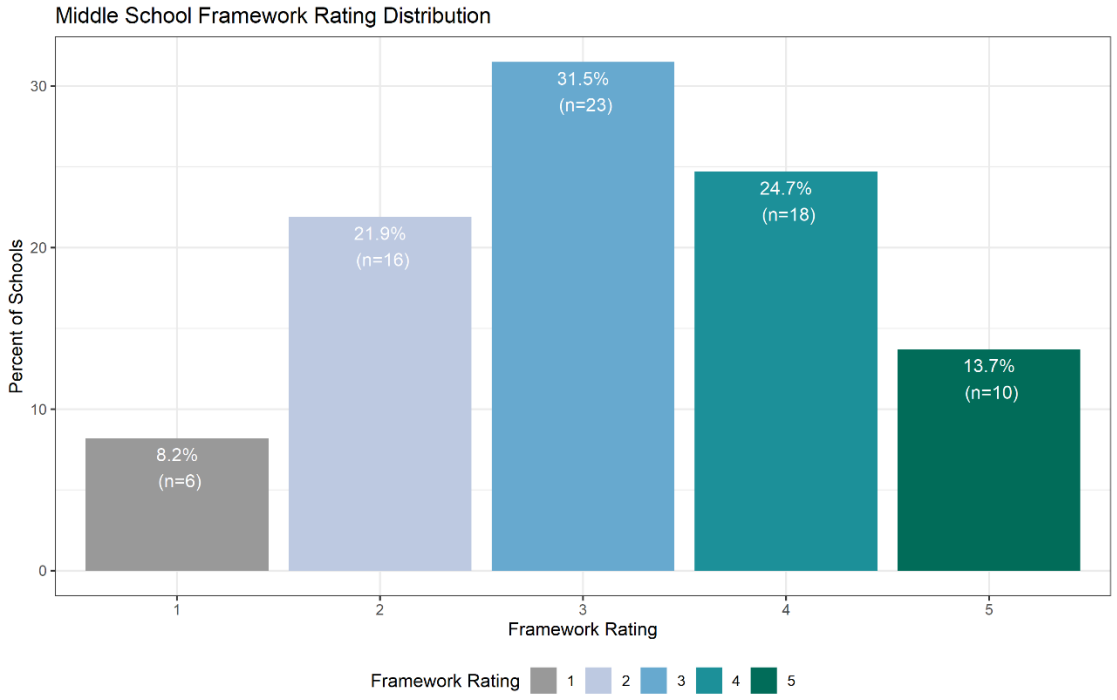
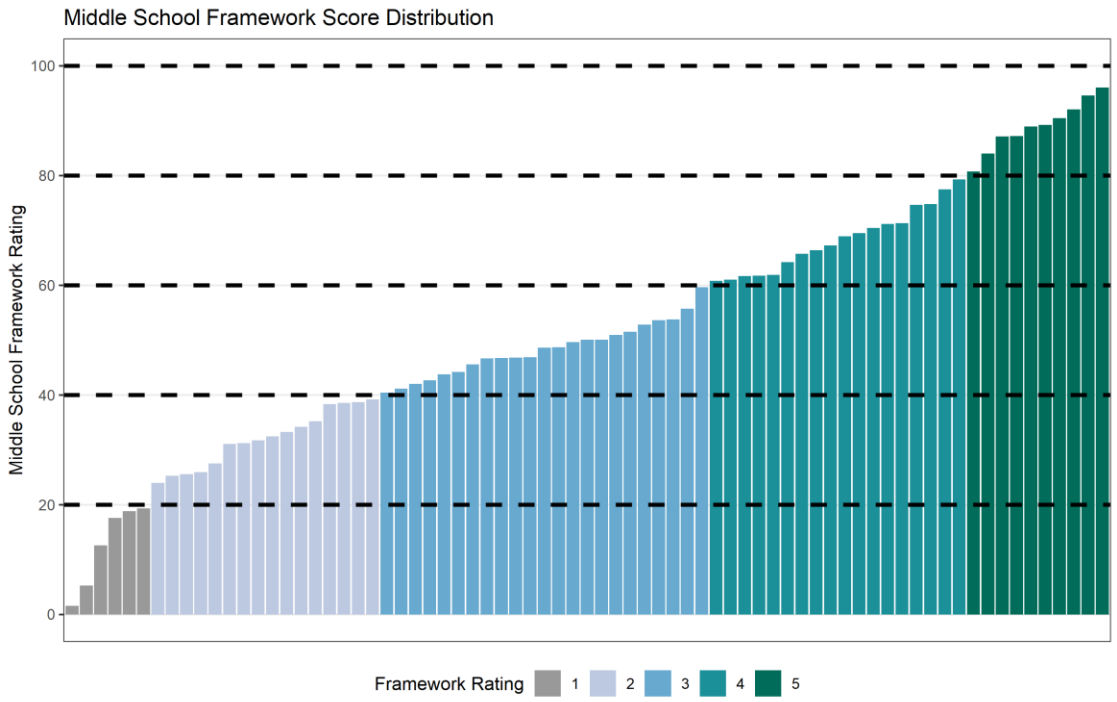


Figure 4



Figures 5 and 6 show the distribution of framework ratings and framework scores for the High School framework, respectively. Since 2018, the number of schools earning three, four, or five star ratings remained the same, while the number of schools earning two star ratings decreased from eight to six and the number of schools earning one star ratings increased from six to seven.

Figure 5

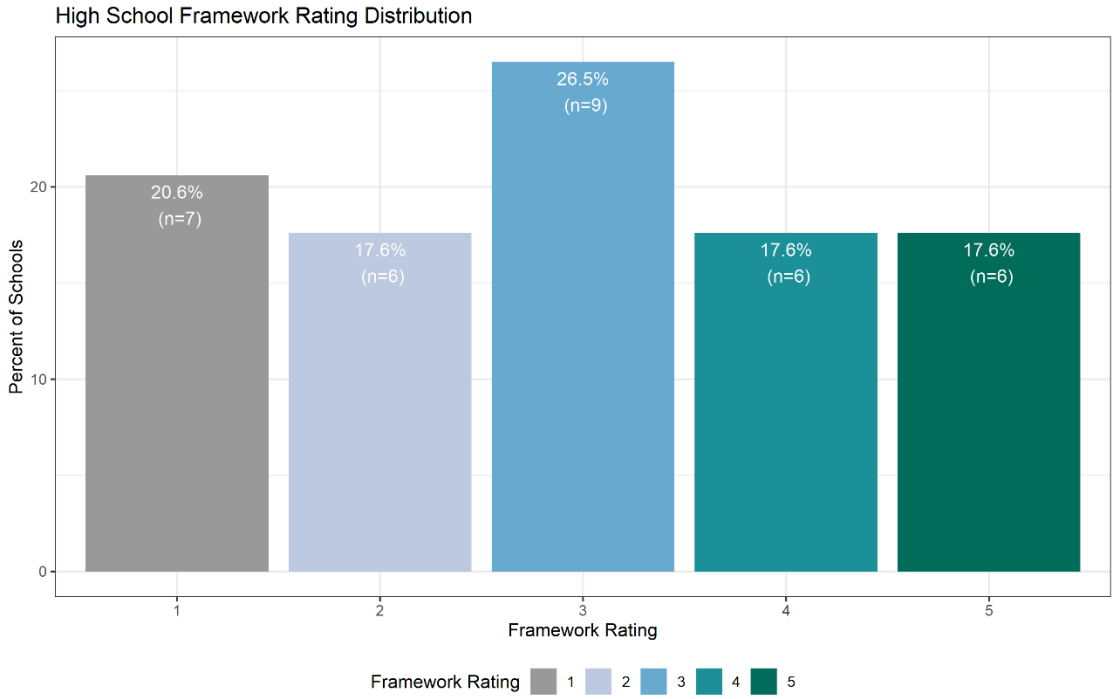
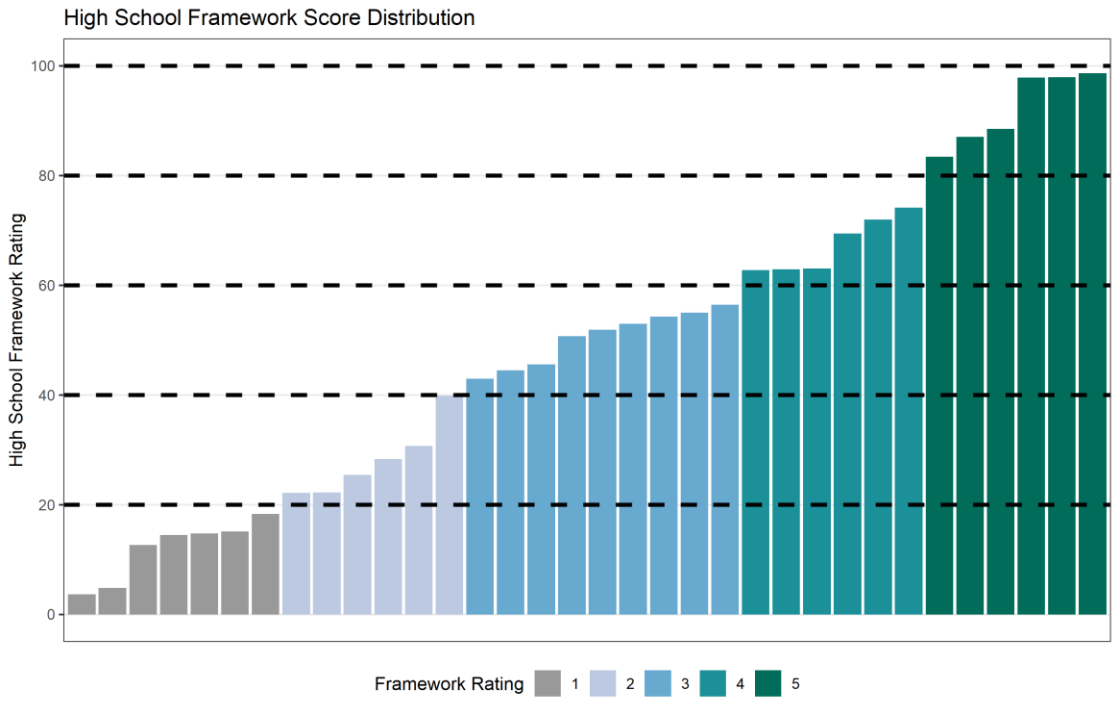


Figure 6



Figures 7 and 8 show the distribution of STAR ratings and framework scores for the Alternative School framework. The number of schools earning three-star ratings remained the same, the number of schools earning two star ratings decreased from six to three, and the number of schools earning one star ratings increased from zero to two.

Figure 7

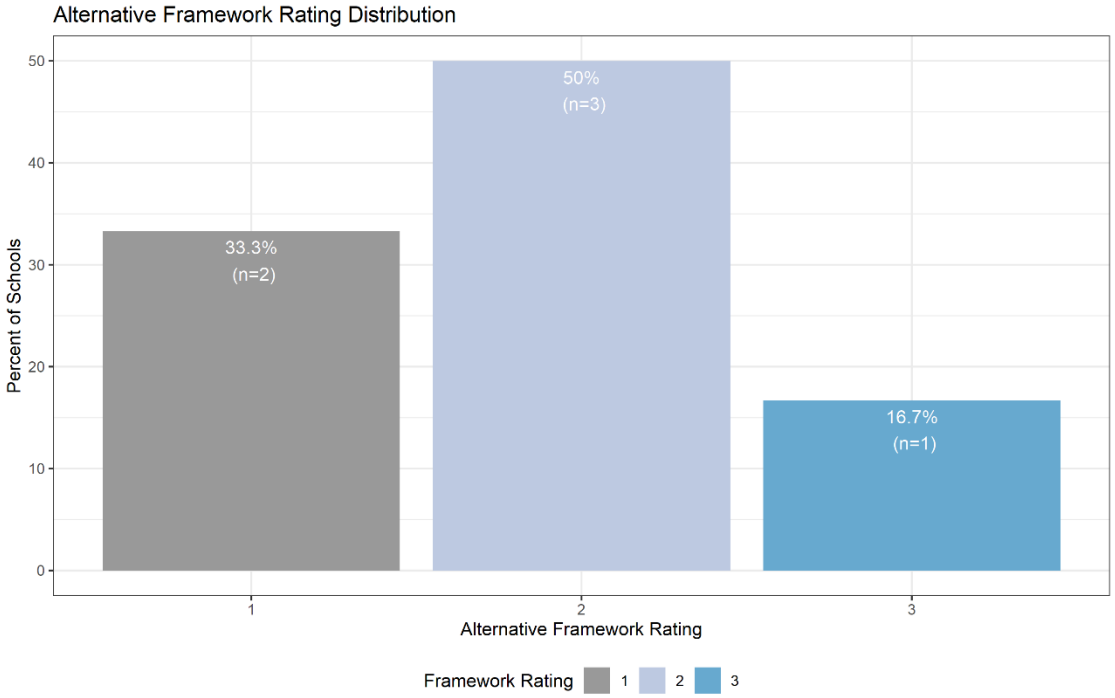
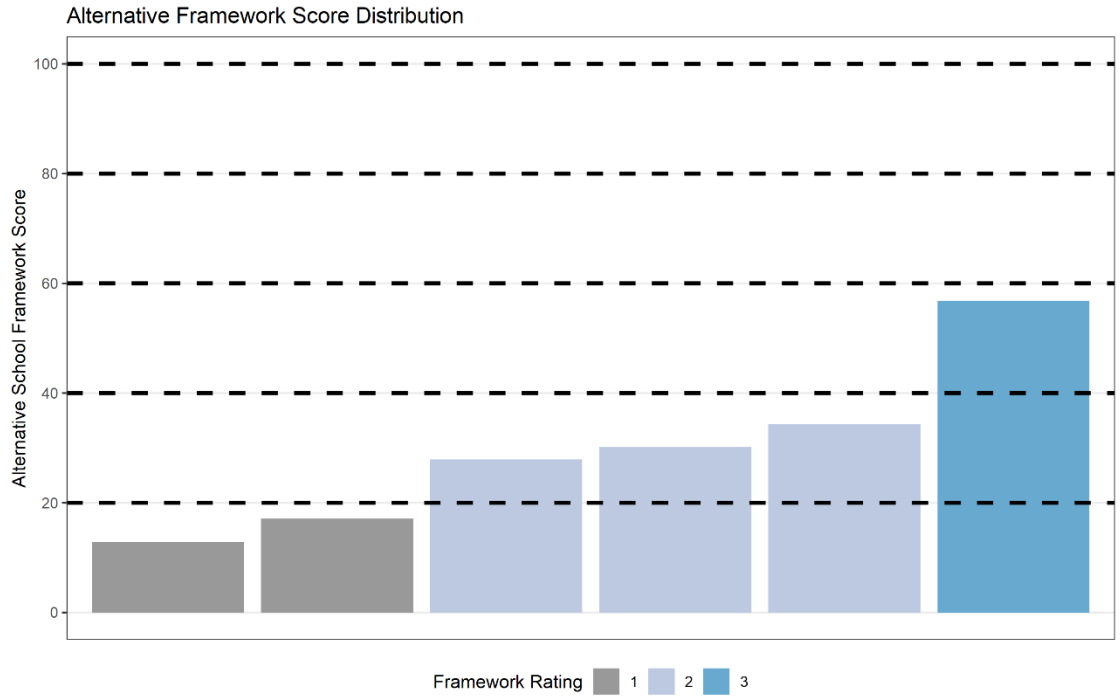


Figure 8



Distributions of STAR Ratings by School Framework and Sector

The figures below show the number and proportion of schools receiving each STAR rating in each framework, by sector. The second figure for each framework shows the distribution of STAR scores by sector, and the third figure for each framework shows all STAR scores on the same axis, with differential shading by sector.

Figure 9

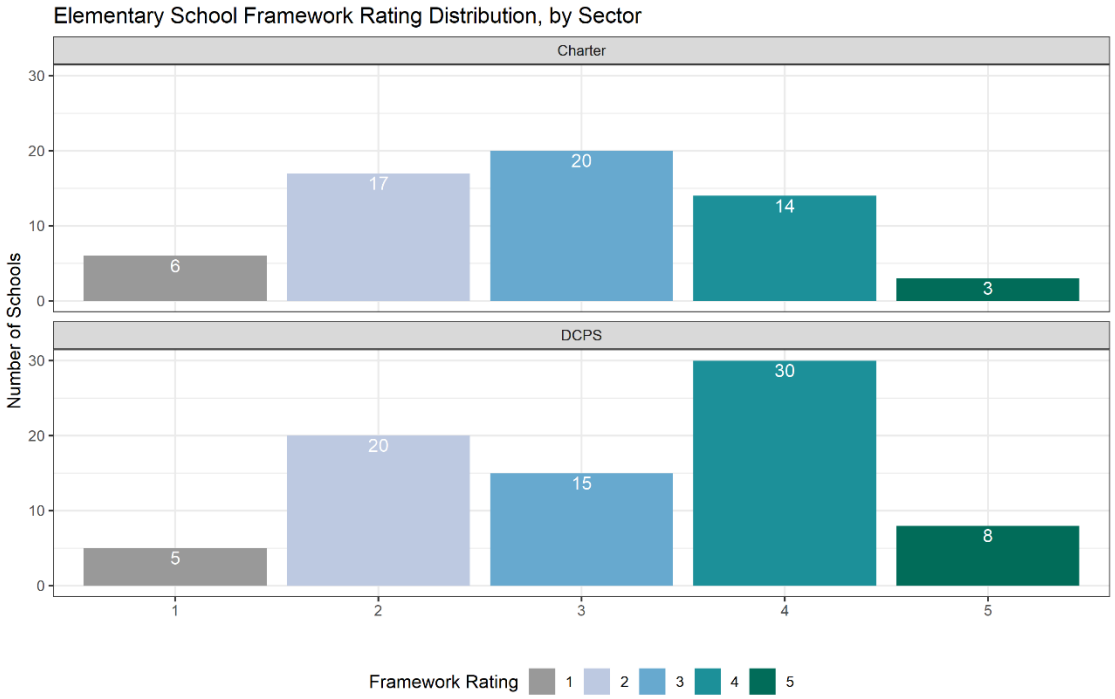


Figure 10

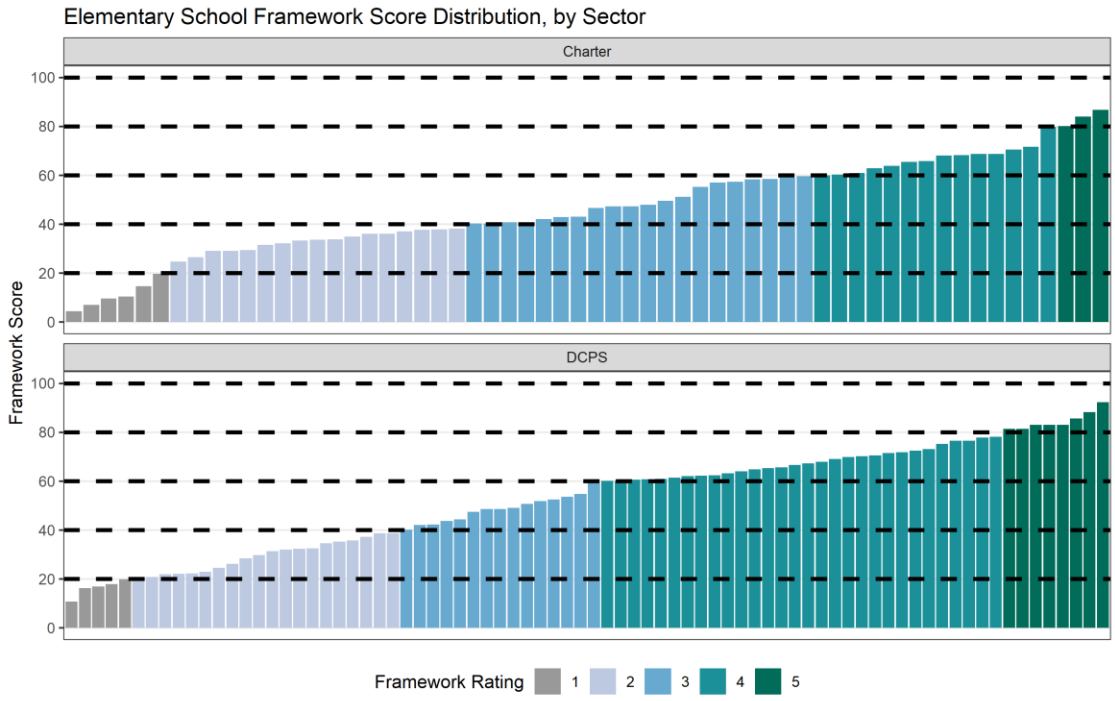


Figure 11

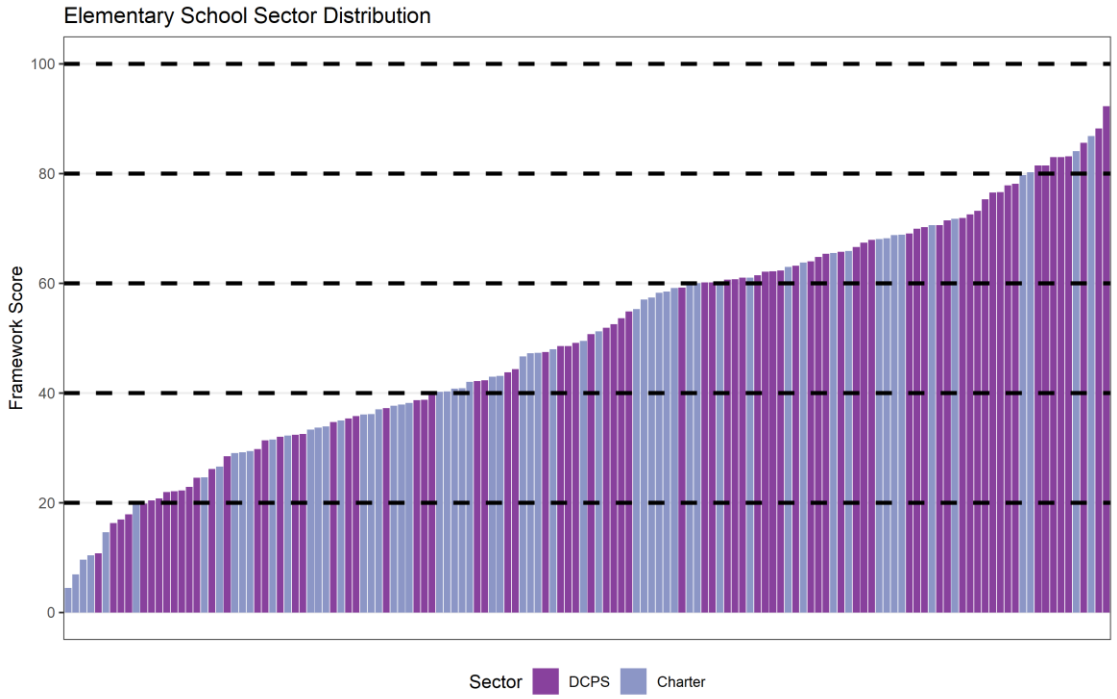


Figure 12

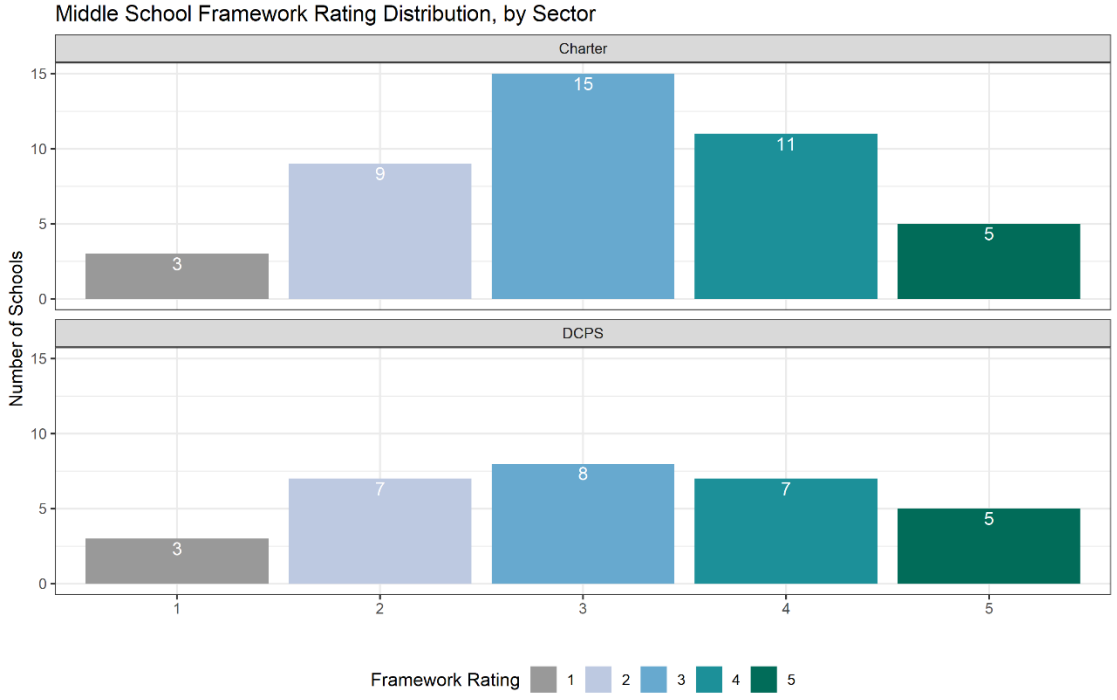


Figure 13

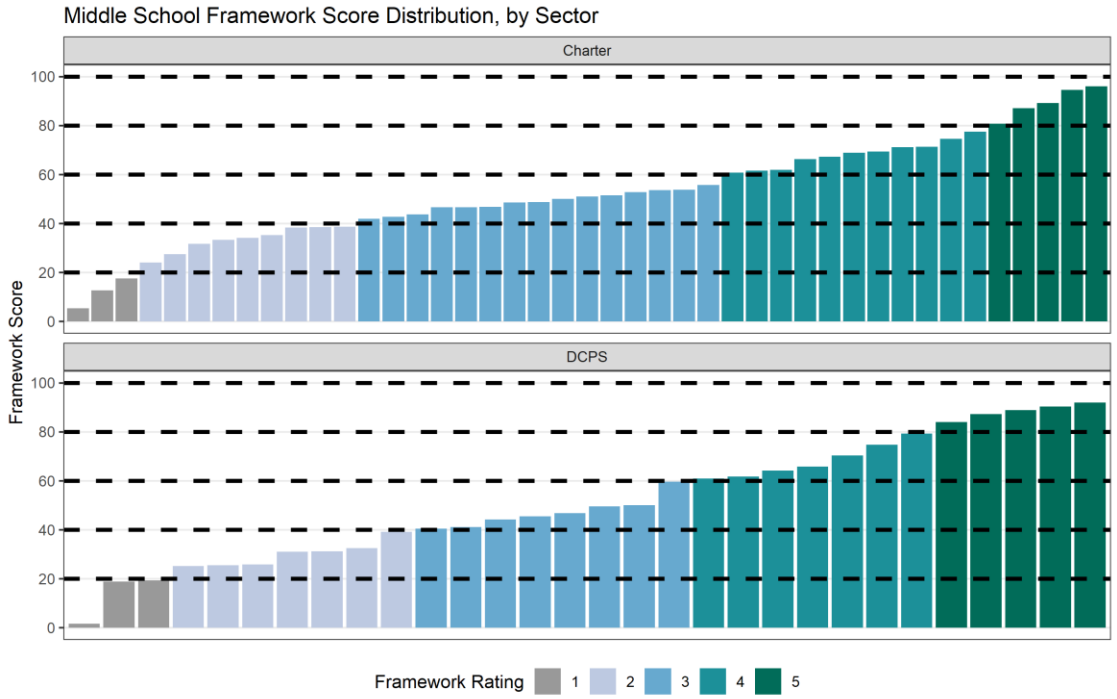


Figure 14

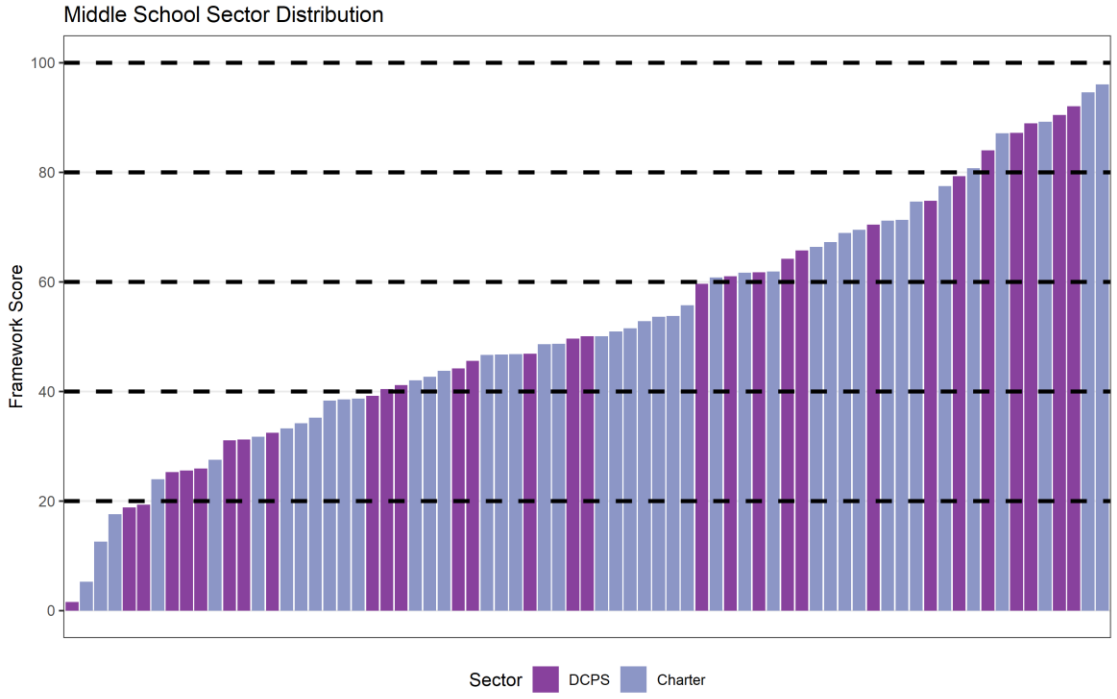


Figure 15

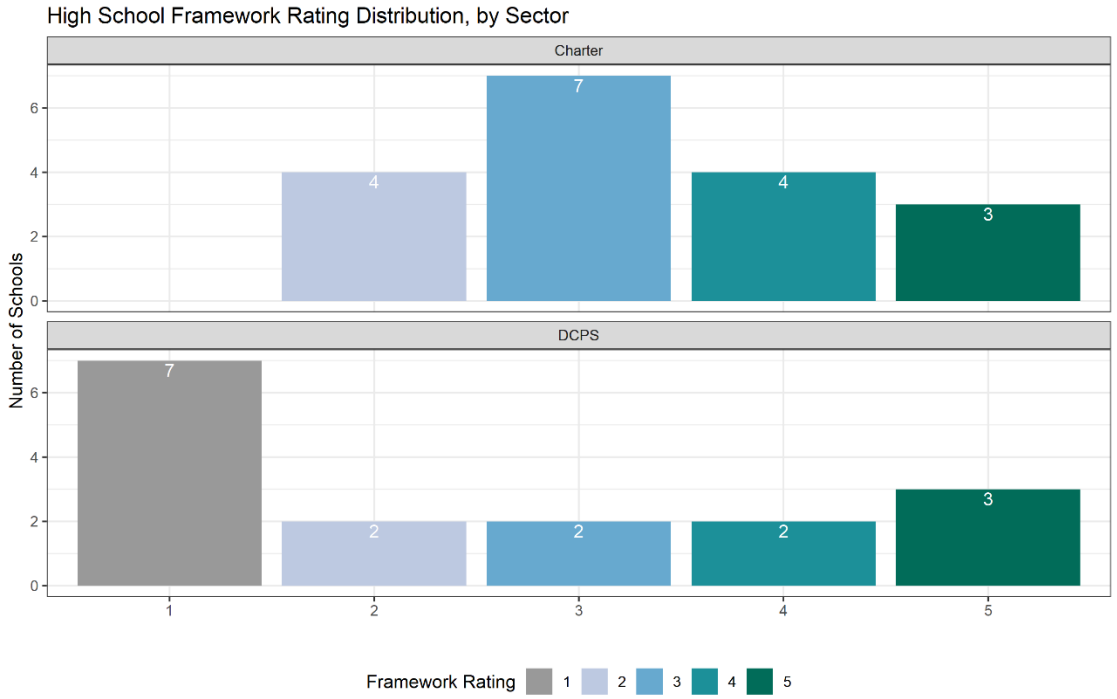


Figure 16

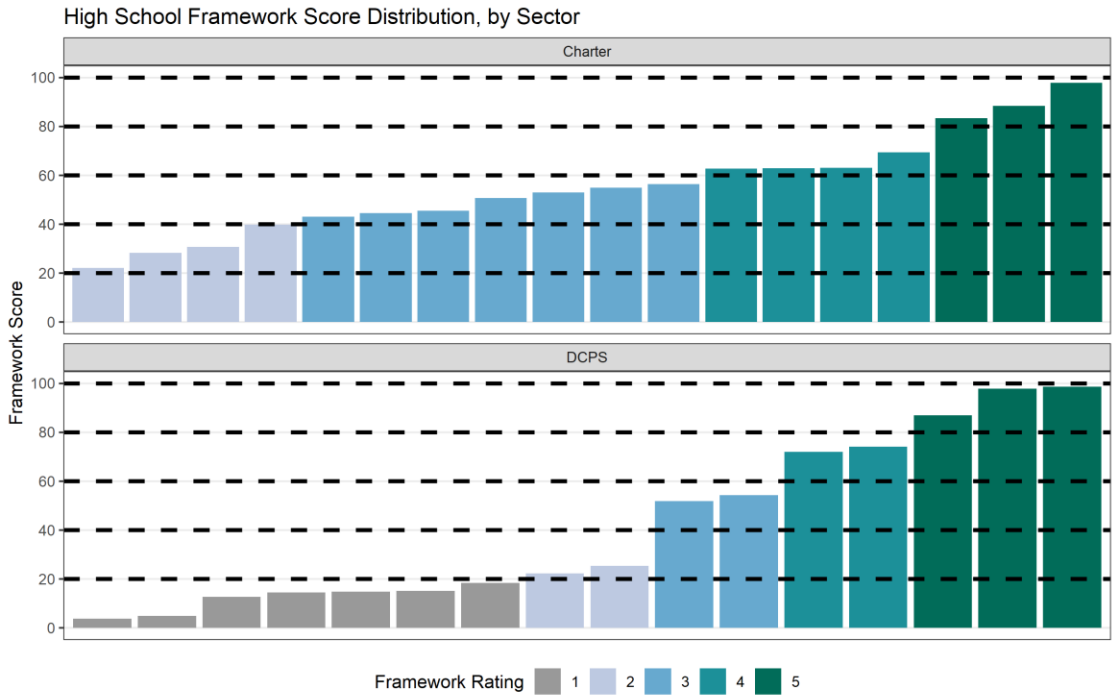


Figure 17

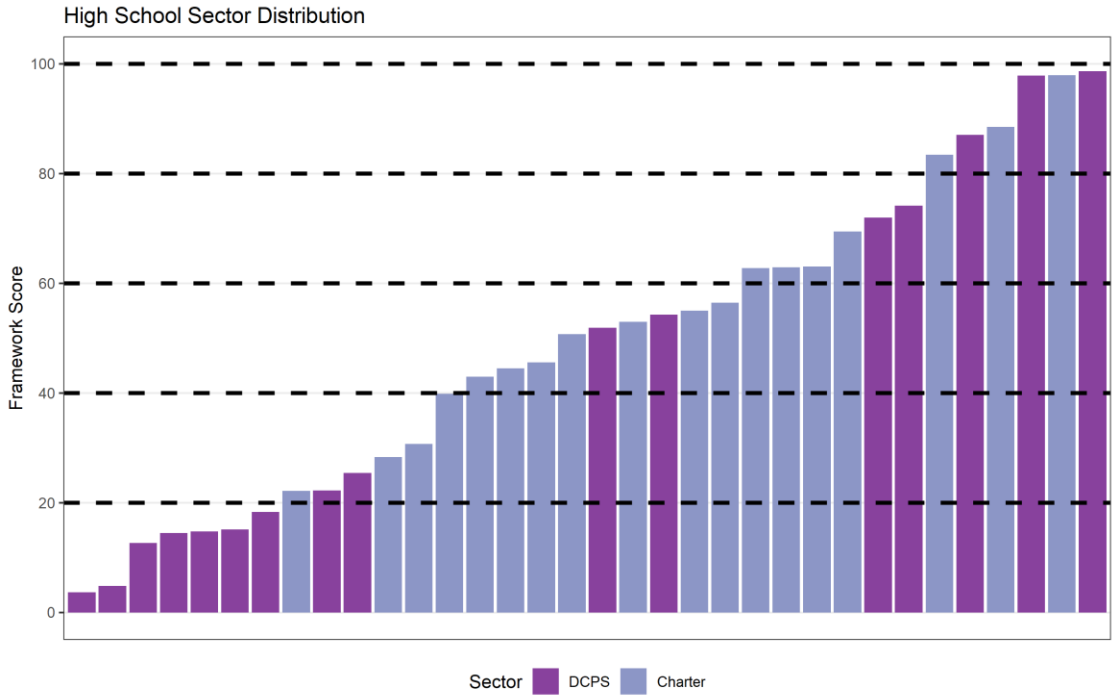


Figure 18

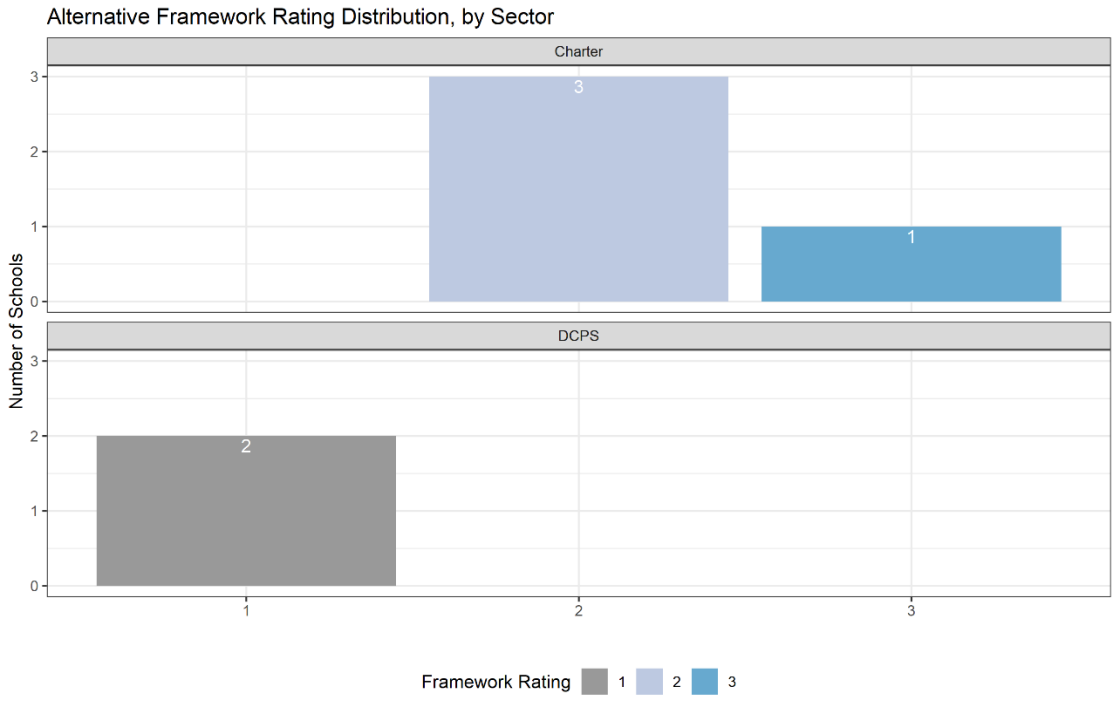


Figure 19

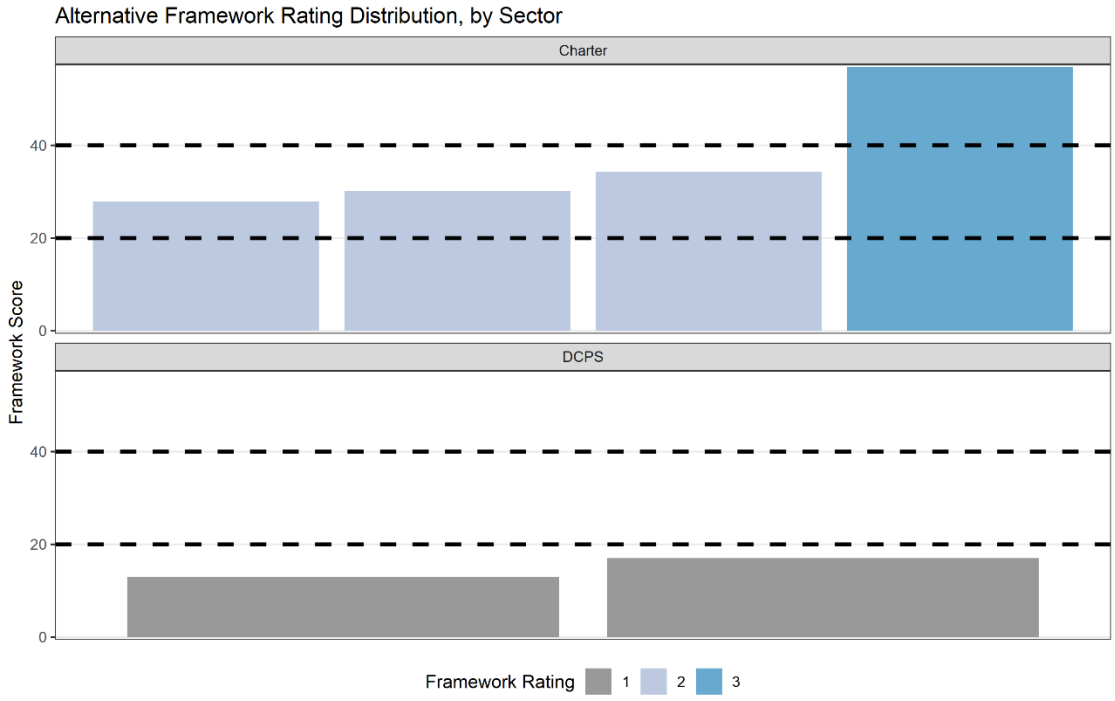
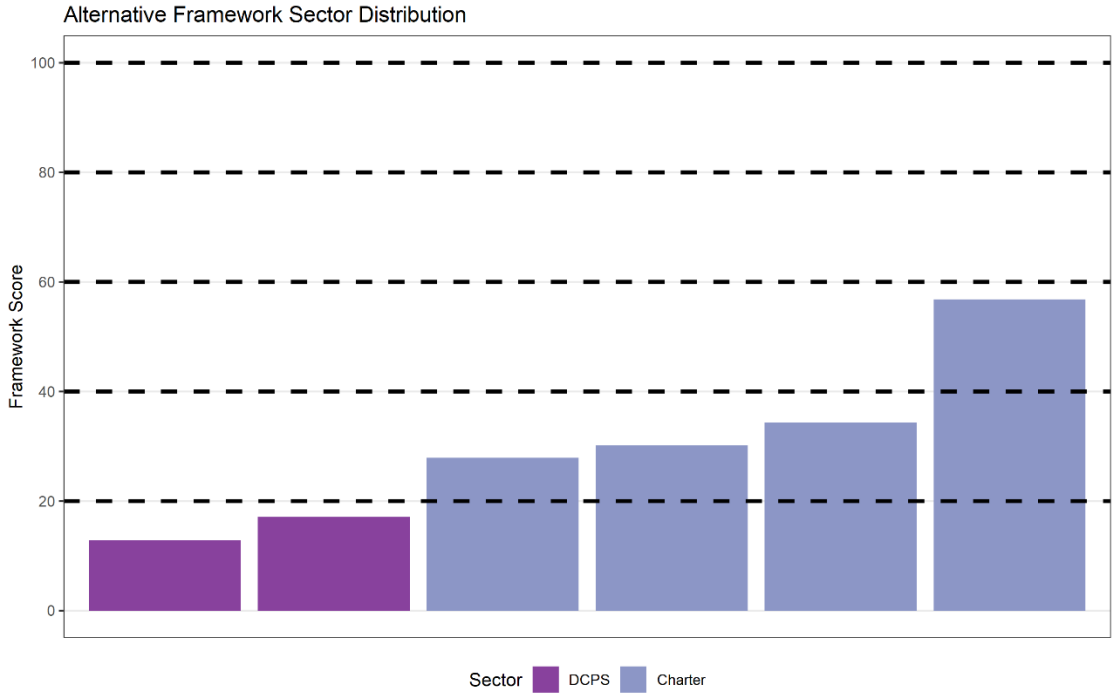


Figure 20



Distributions of STAR Ratings by School Framework and Ward

The figures below show STAR rating proportions by framework and by ward. Each segment represents the proportion of schools receiving each STAR rating; the number inside each segment is the total number of schools with the corresponding STAR rating.

Each ward has four- and five-star schools, signifying that there are high performing schools throughout DC. At the same time, there are differences in STAR rating distributions across wards. STAR Framework metric targets are set for three consecutive years which provides a consistent comparison measure across years. The goal is for all schools improve their STAR scores from year to year.

Figure 21

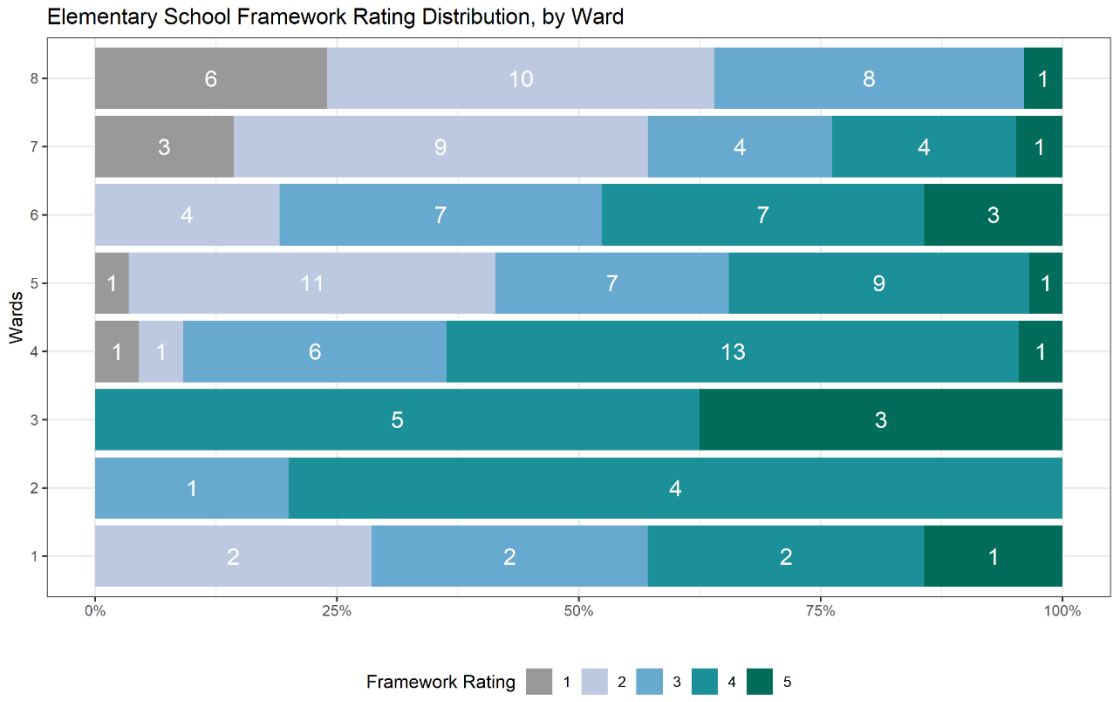


Figure 22

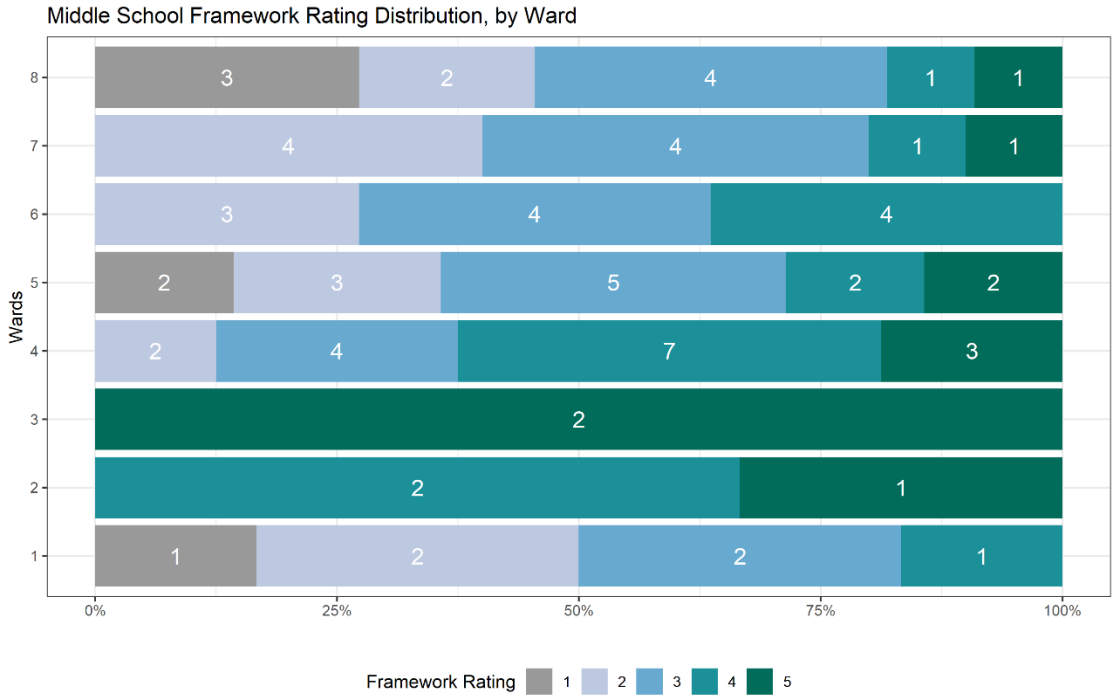


Figure 23

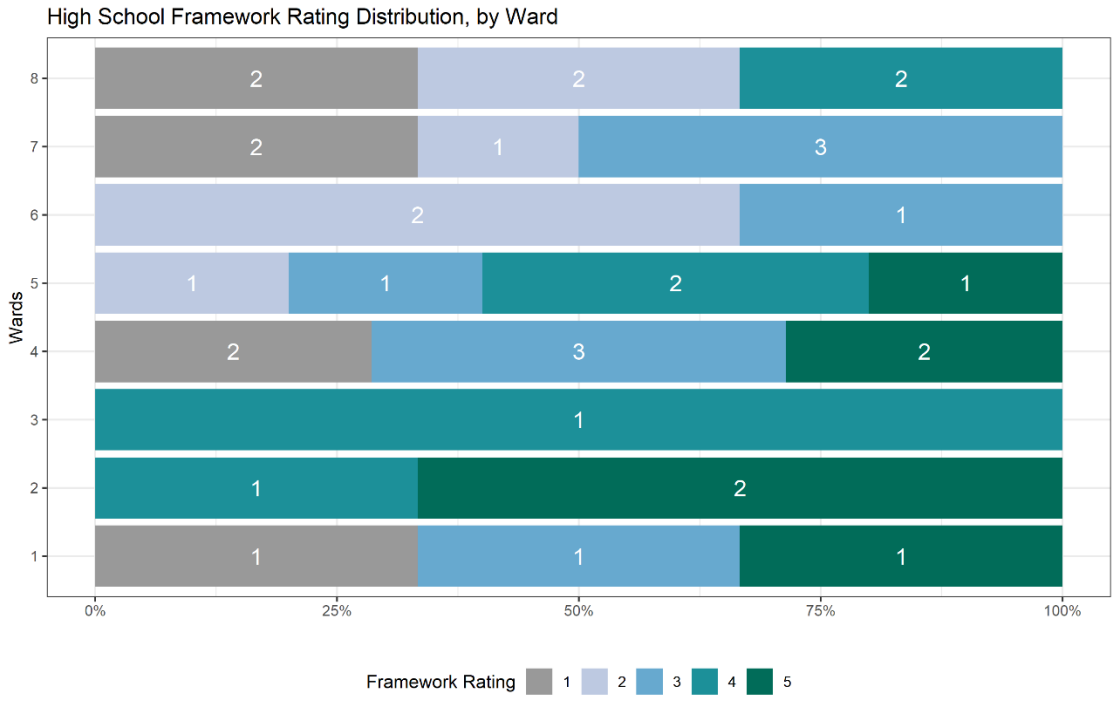


Figure 24

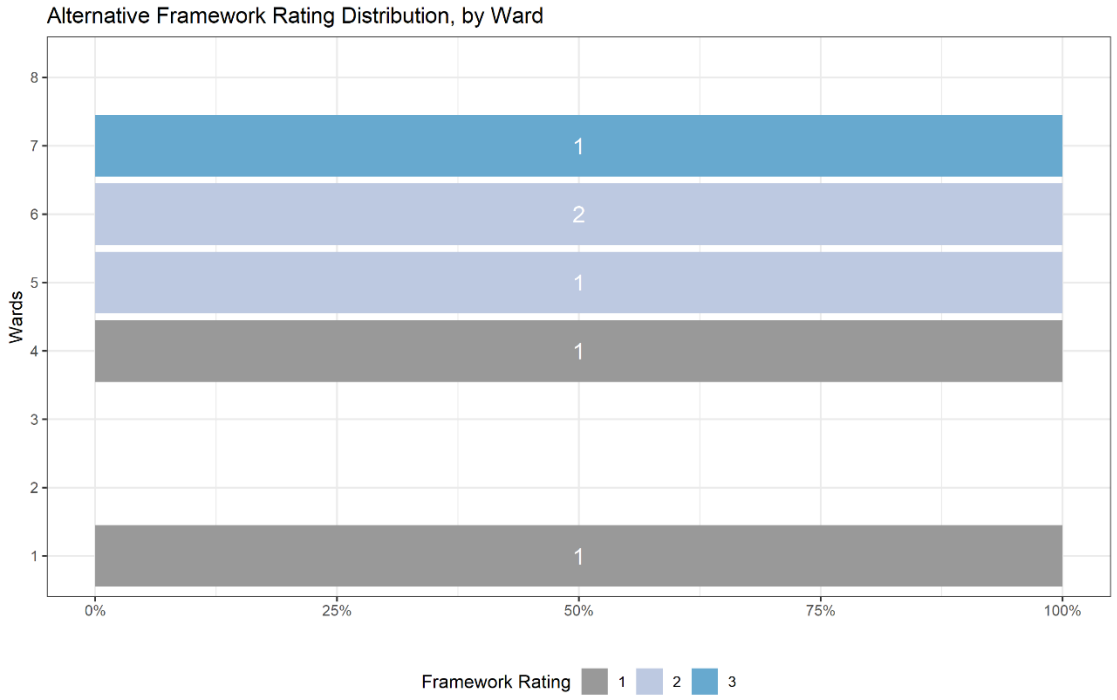
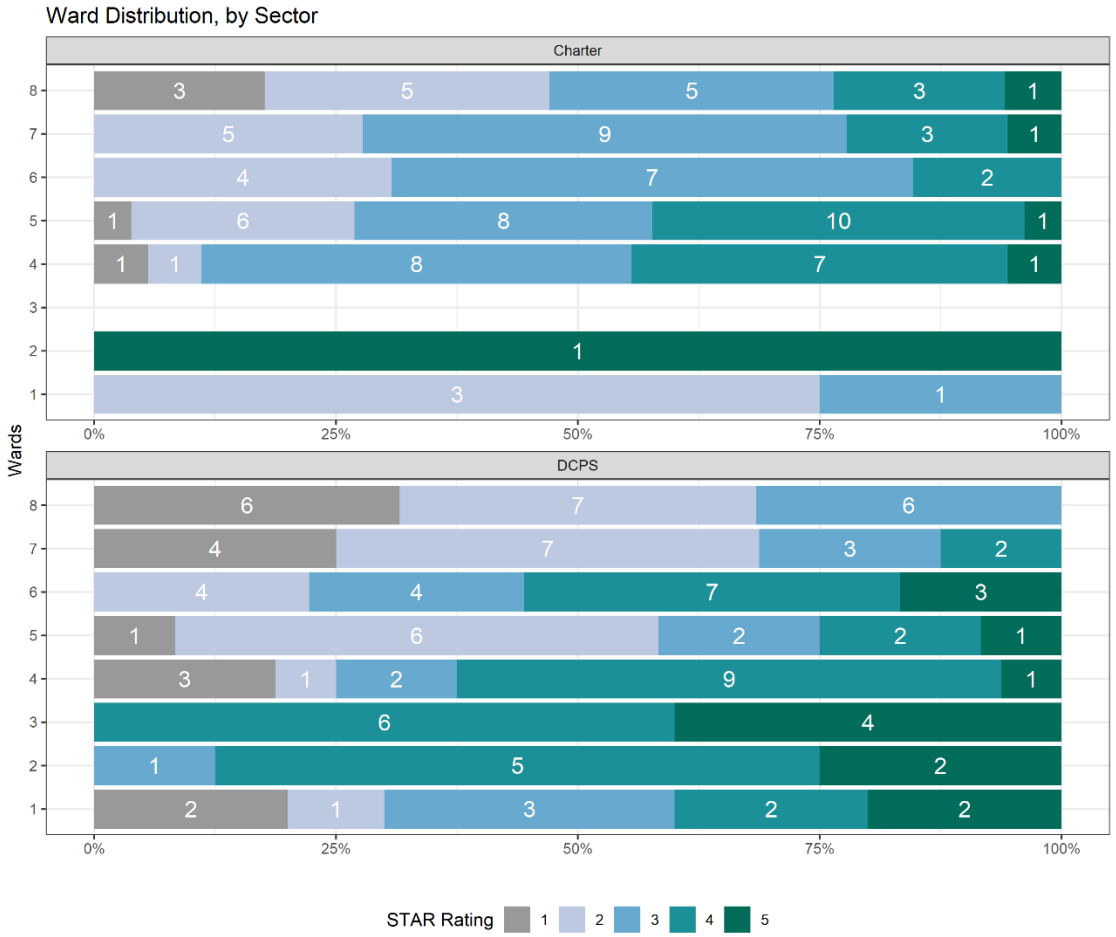

Alternative Framework Rating Distribution, by Ward
Wards
8
7
6
5
4
3
2
1
1
2
1
1
1
0%
25%
50%
75%
100%
Framework Rating
1
2
3

Figure 25


Ward Distribution, by Sector
Charter
DCPS
Wards
8
7
6
5
4
3
2
1
0%
25%
50%
75%
100%
3 5 5 3 1
5 9 3 1
4 7 2
1 6 8 10 1
1 1 8 7 1
1
3 1
6 7 6
4 7 3 2
4 4 7 3
1 6 2 2 1
3 1 2 9 1
6 4
1 5 2
2 1 3 2 2
STAR Rating
1
2
3
4
5

Distributions of Student Group Ratings

While all schools who received a STAR rating have a student group rating for the "all students" group, not all schools have enough students in each particular student group to earn a student group score. A student group must have at least ten students to earn a metric score for each metric, and at least 50 possible metric points to earn a student group rating. Student group scores are then combined to generate framework scores. Some schools serve multiple grade spans and are measured by multiple frameworks. Those framework scores are combined to form the school STAR Score. The distribution of each student group's ratings with the number of school frameworks are shown below, for all DC public schools and by sector. Each segment represents the proportion of school frameworks receiving each student group score, and the number inside each segment is the total number of school frameworks with the corresponding student group score.

Figure 26

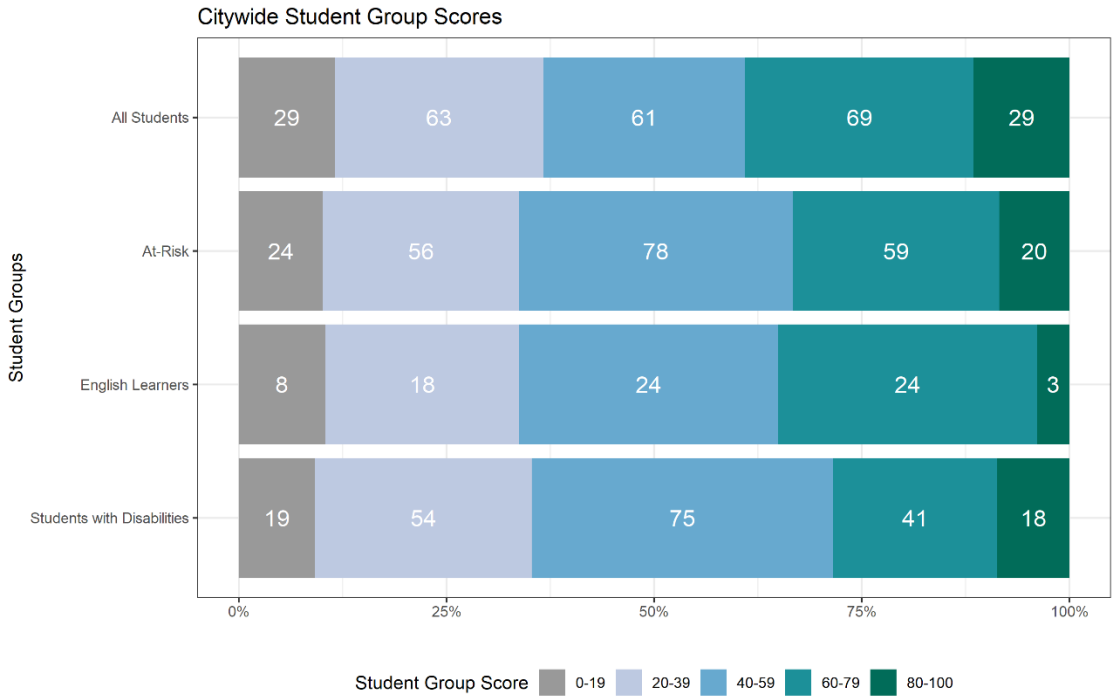


Figure 27

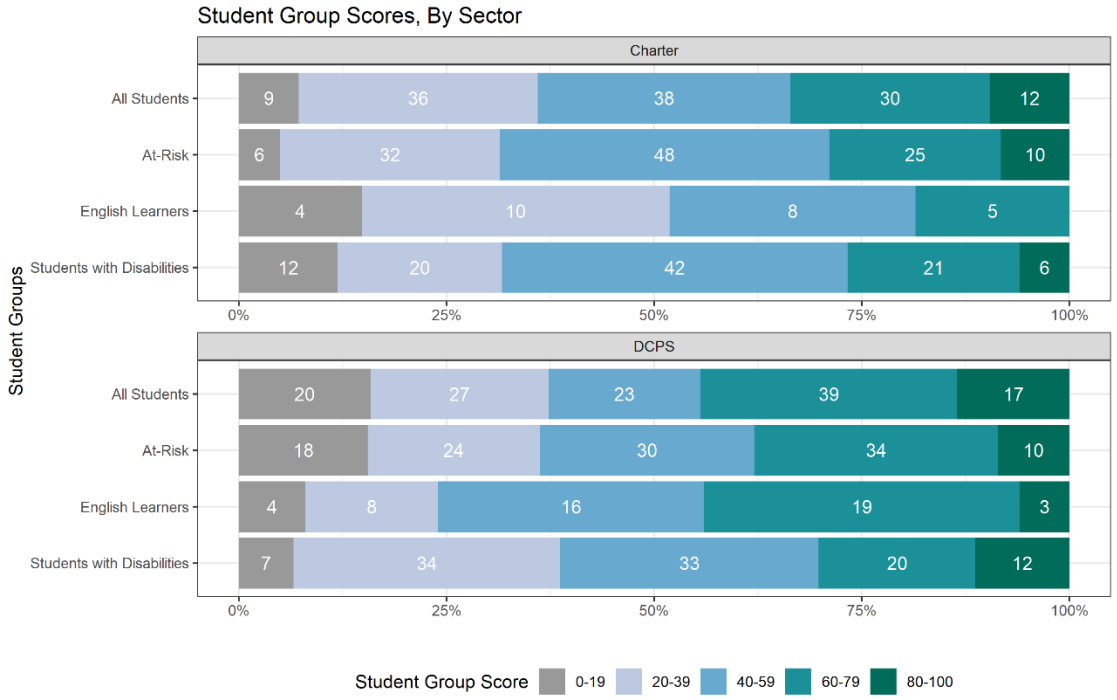


Figure 28

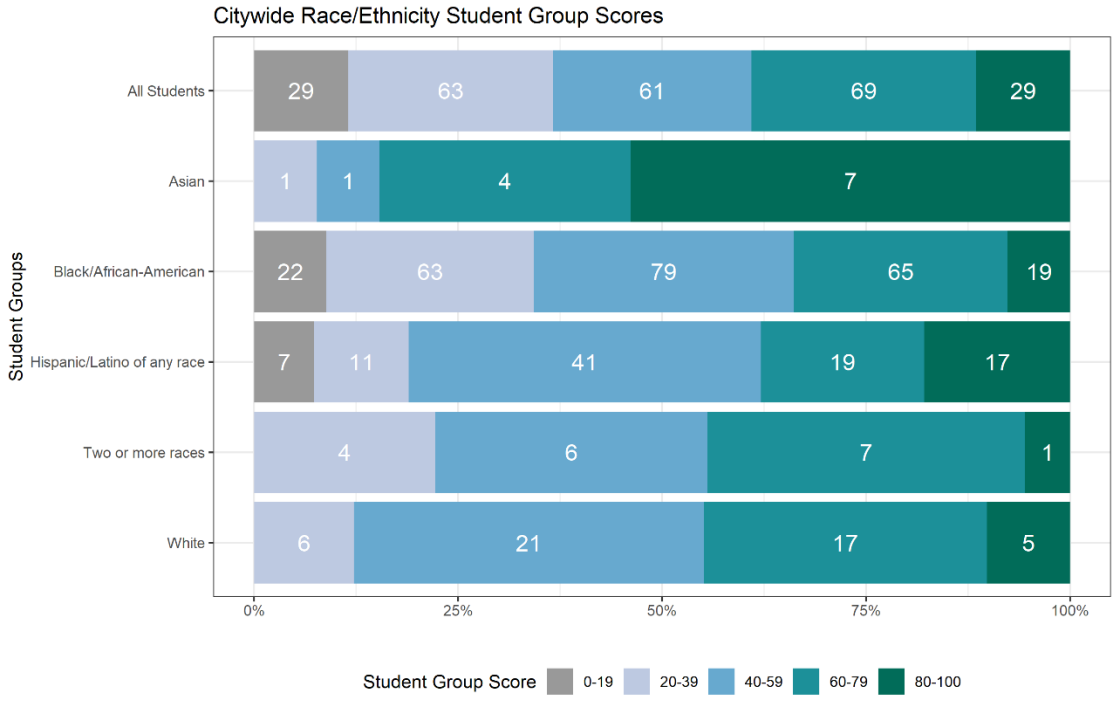
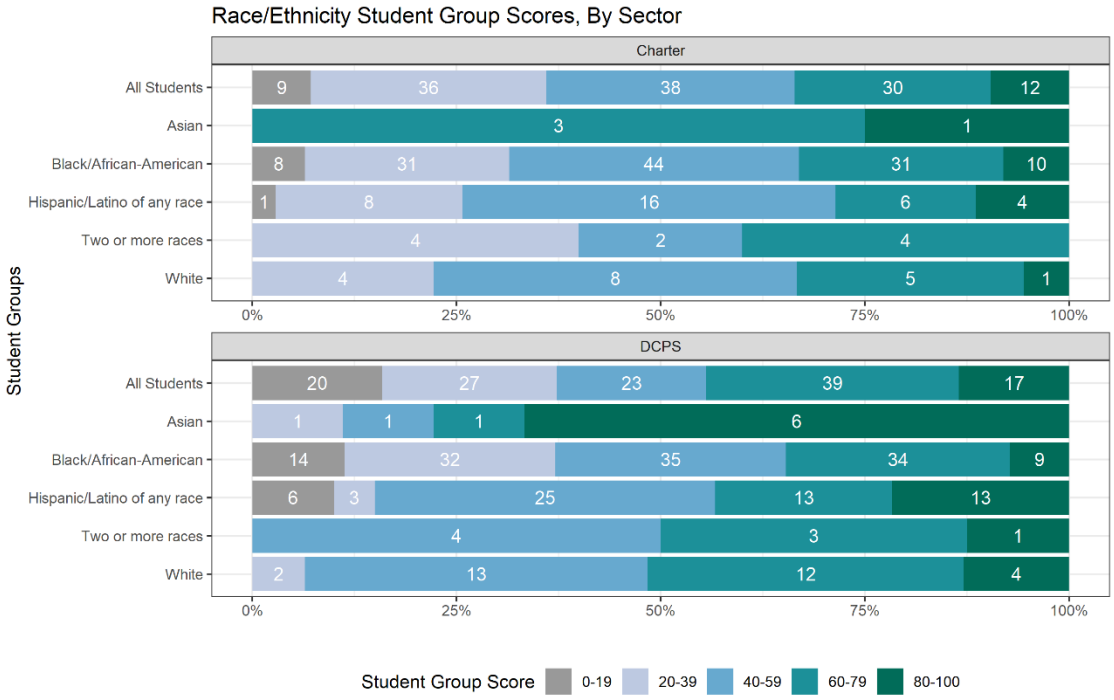


Figure 29


Race/Ethnicity Student Group Scores, By Sector
Charter
All Students
Asian
Black/African-American
Hispanic/Latino of any race
Two or more races
White
9
36
38
30
12
3
1
8
31
44
31
10
1
8
16
6
4
4
2
4
4
8
5
1
0%
25%
50%
75%
100%
DCPS
All Students
Asian
Black/African-American
Hispanic/Latino of any race
Two or more races
White
20
27
23
39
17
1
1
1
6
14
32
35
34
9
6
3
25
13
13
4
3
1
2
13
12
4
0%
25%
50%
75%
100%
Student Groups
Student Group Score
0-19
20-39
40-59
60-79
80-100

Appendix B - Distributions of Metric Scores

Metric Distributions: Elementary, Middle, and High School Frameworks

The following section provides the distribution of metric scores for each metric in the STAR Framework, by framework, for the all students group. The figure for each metric provides the distribution of metric scores by framework along with the corresponding floors and targets. Schools with metric scores below the floor earn no points for that metric in the STAR Framework; schools with metrics scores above the target earn all of the points possible for that metric in the STAR Framework. For more information on floors and targets, and how metric scores are translated into points, please refer to the STAR Framework Technical Guide.

Schools earning one- and five-star ratings are highlighted in each figure. For the State Assessment metrics measuring Meeting or Exceeding Expectations (PARCC 4+/MSAA3+) and the Approaching, Meeting, or Exceeding Expectations (PARCC 3+/MSAA 3+) in the achievement domain, schools with 1-star ratings tend to be clustered at the lower end of the distribution while schools with five-star ratings tend to have higher metric scores. Though the highest and lowest-rated schools are generally found at the highest and lowest levels of performance on the state assessment, respectively, there are two, three, and four-star schools also found at the highest and lowest levels of state assessment performance, demonstrating that very high or very low performance on academic achievement metrics may be tempered by performance on other metrics in calculating the final STAR ratings for schools.

Other metrics exhibit greater variability in the distribution of metric scores by STAR rating. Figure 29, Figure 30, and Figure 31 show the performance of schools on 90% Attendance, Re-Enrollment, and Growth to Proficiency metrics, respectively. Performance on these metrics demonstrate that schools earning one-star ratings are not uniformly low performing and schools earning five-star ratings are not uniformly high performing. Similarly, schools receiving two-, three-, or four-star ratings may demonstrate both high and low performance on these metrics.

Figure 30

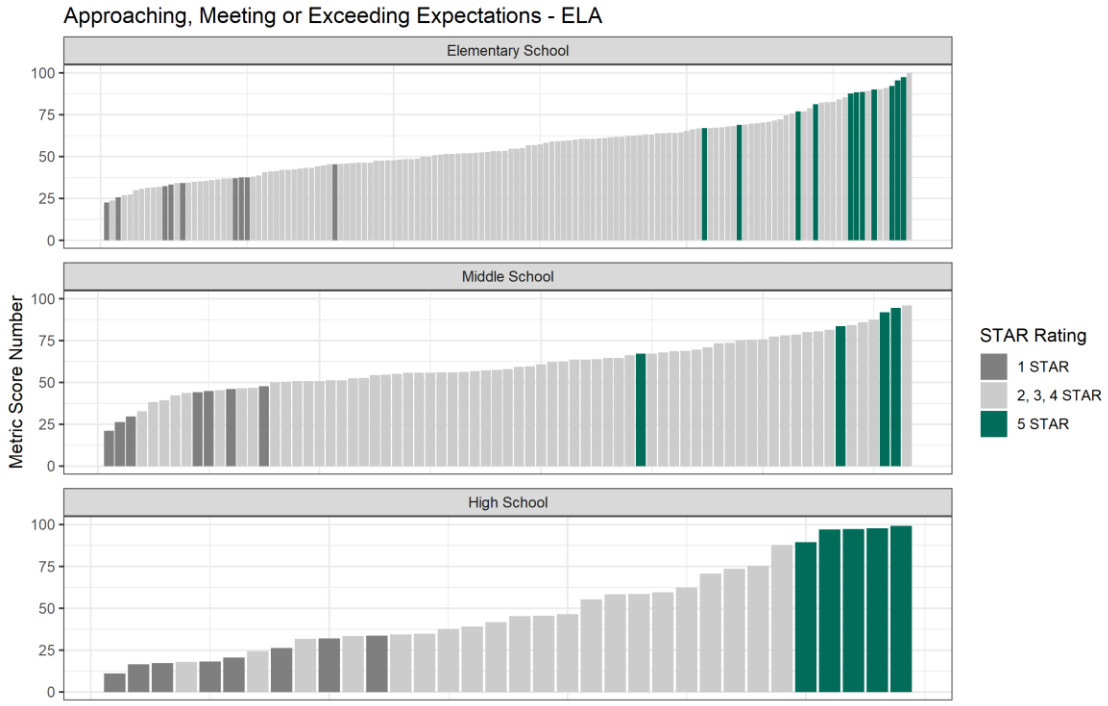


Figure 31

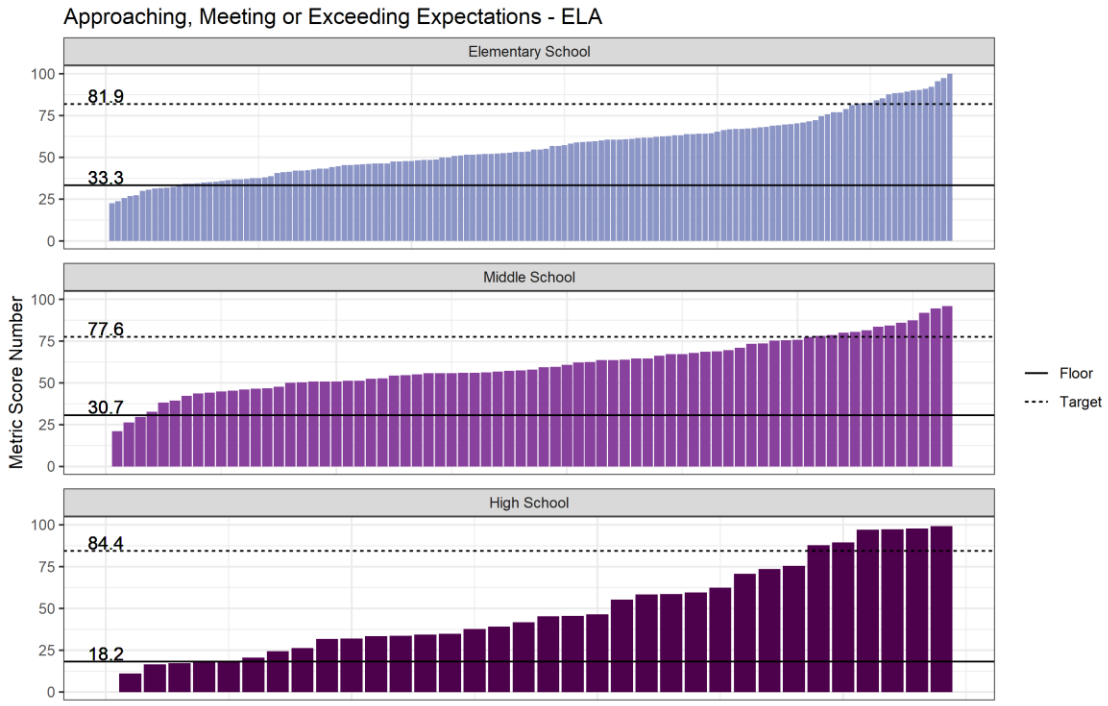


Figure 32

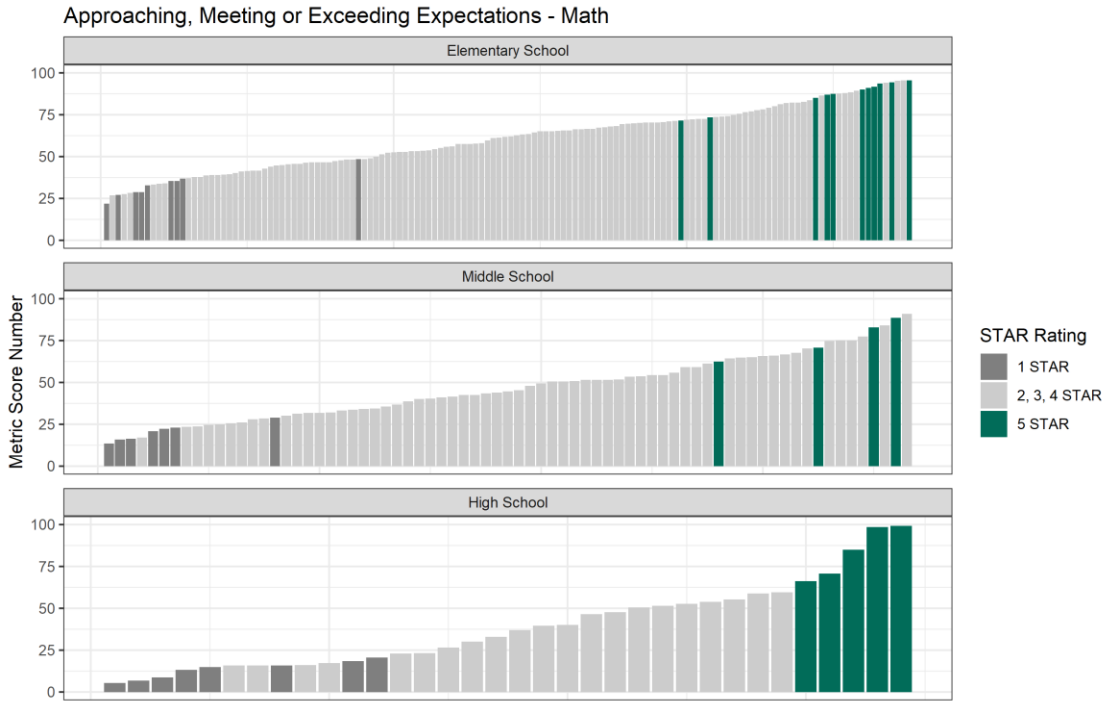


Figure 33

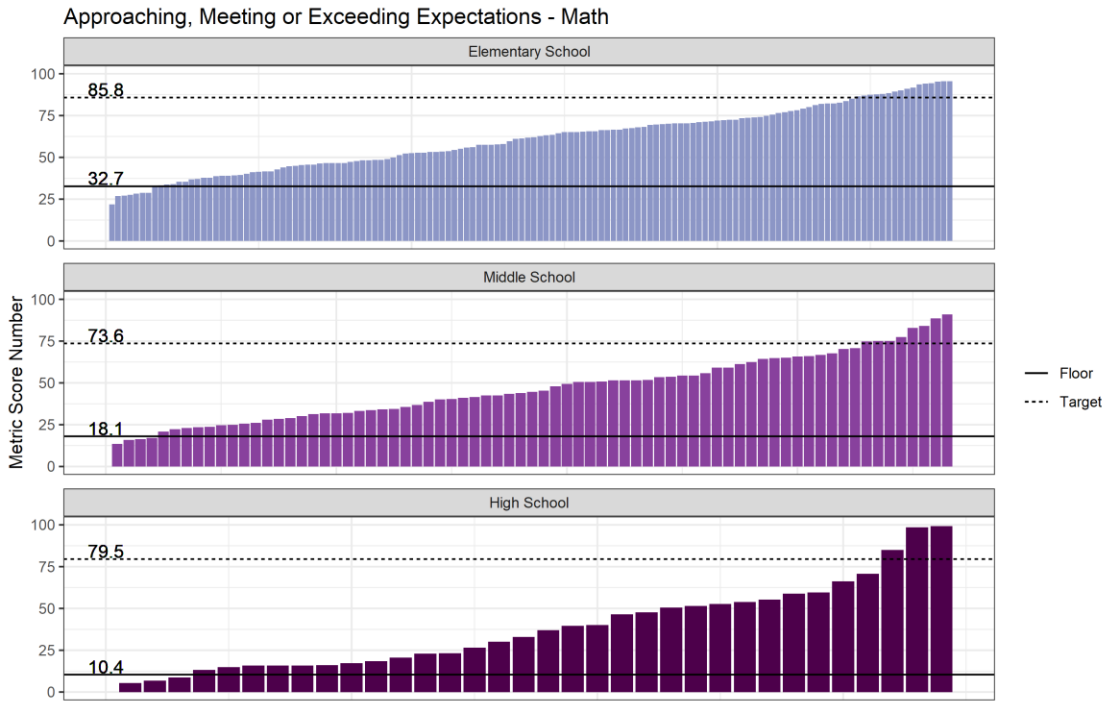


Figure 34

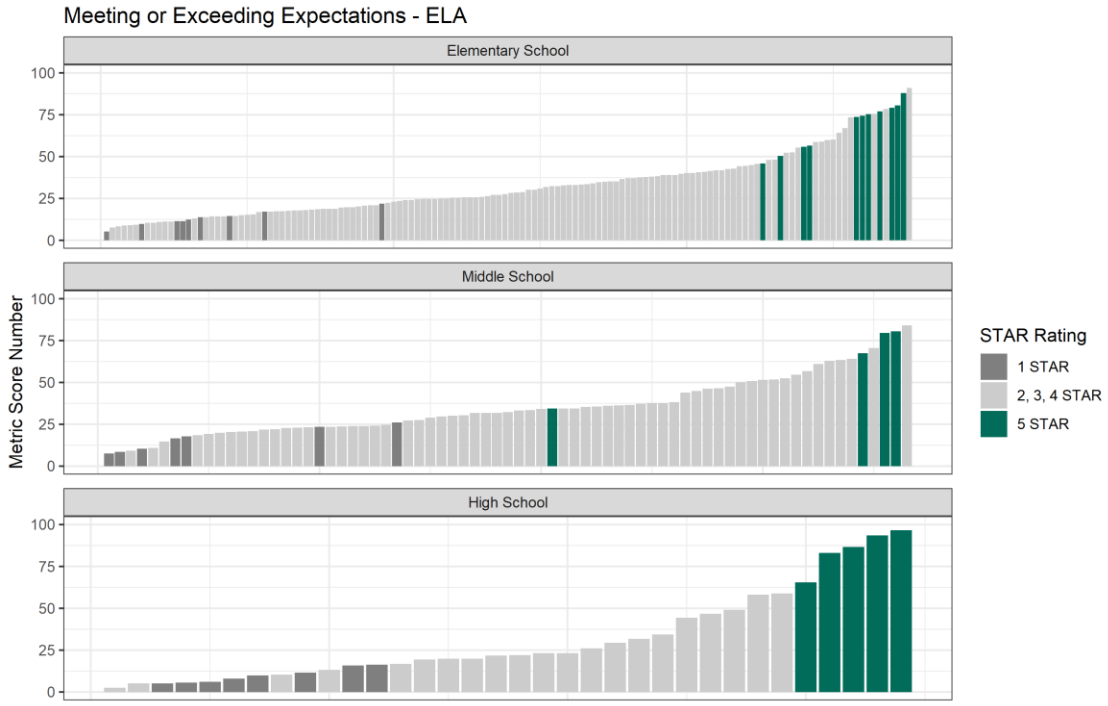


Figure 35

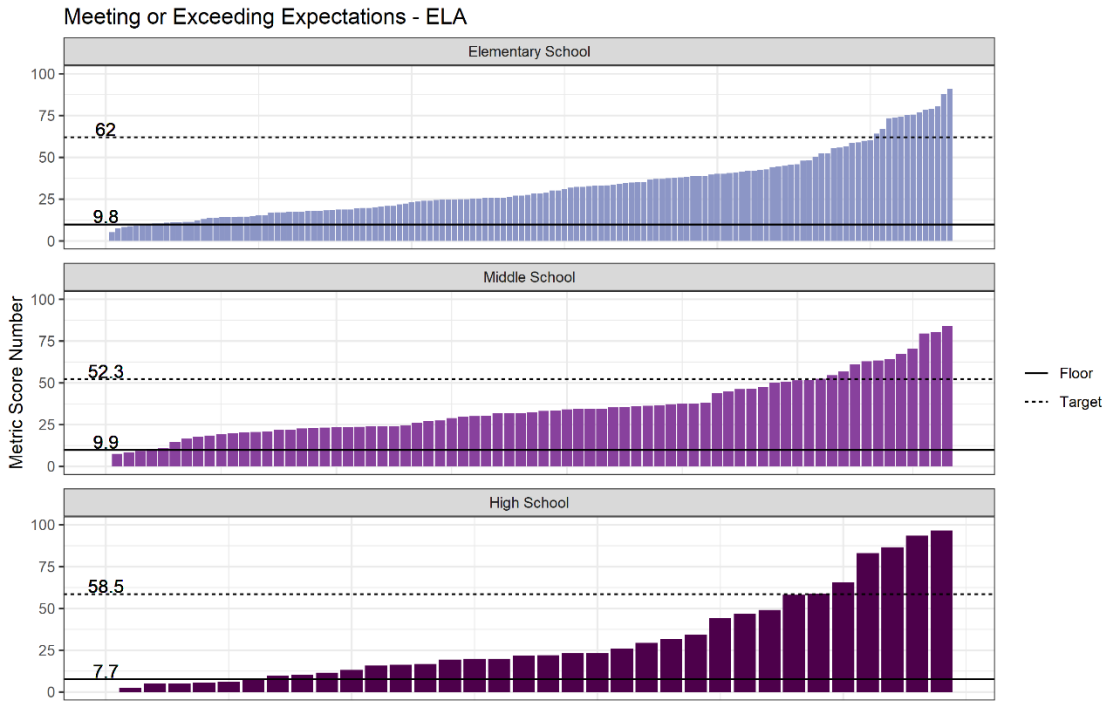


Figure 36

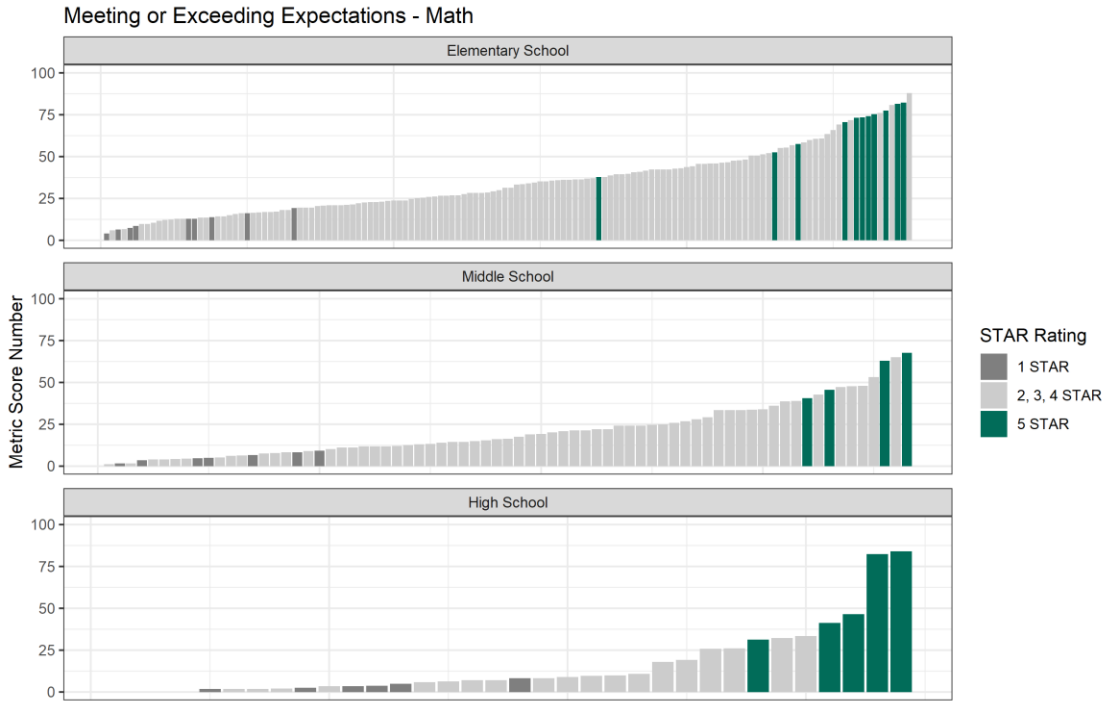


Figure 37

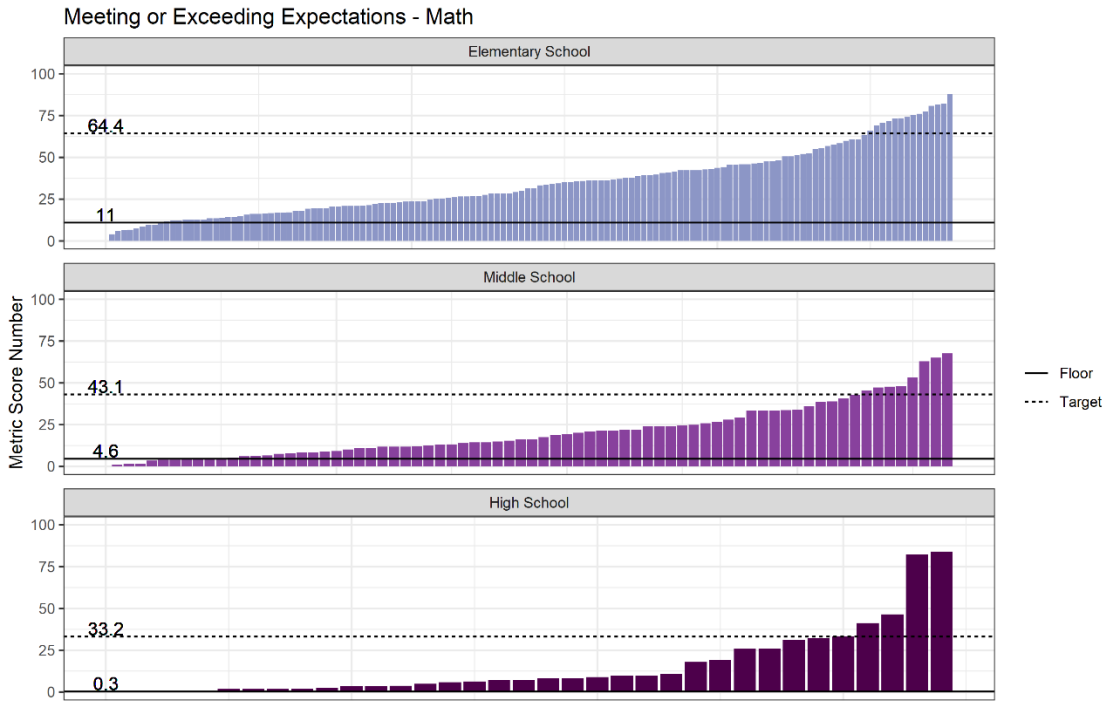


Figure 38

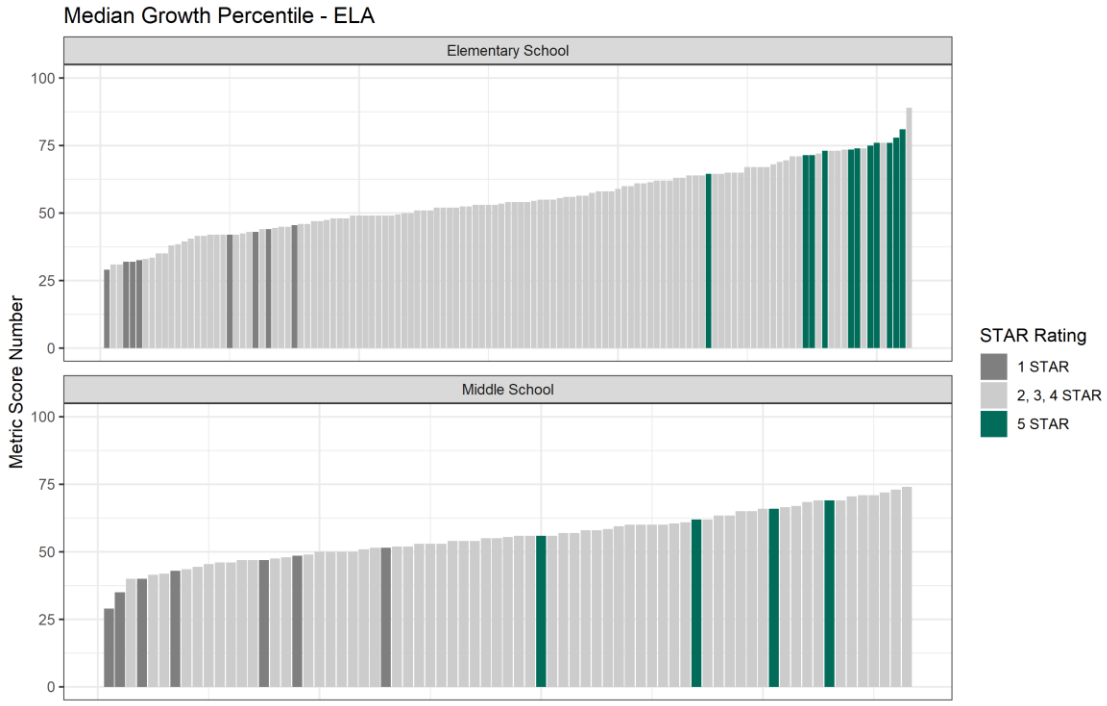


Figure 39

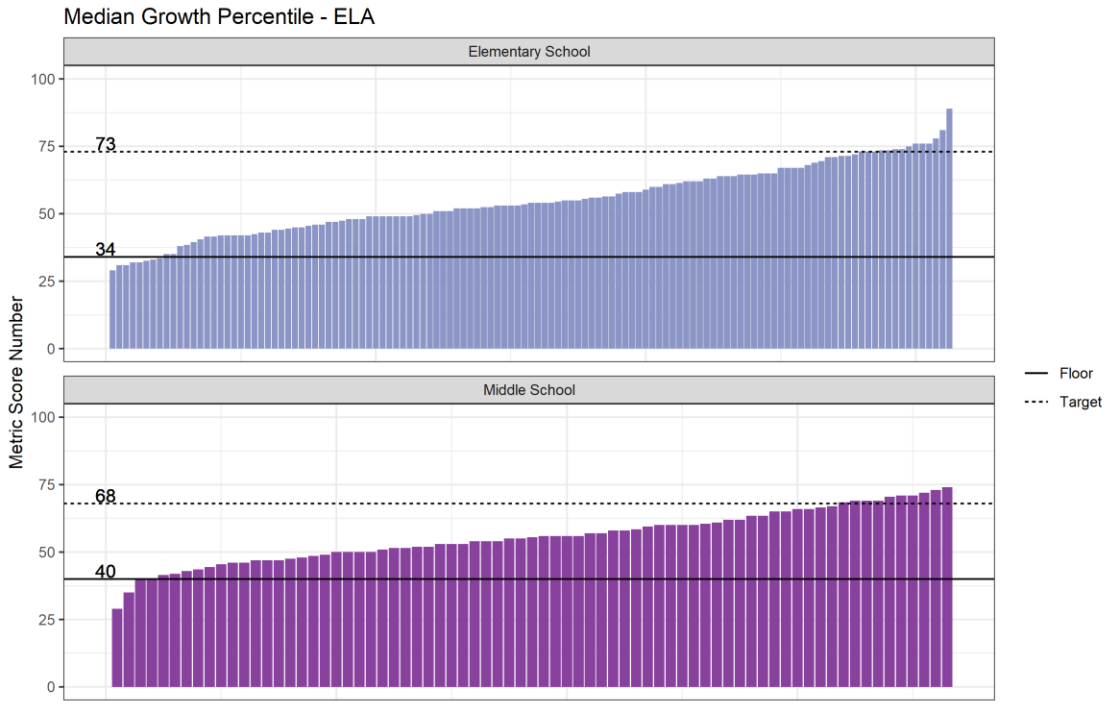


Figure 40

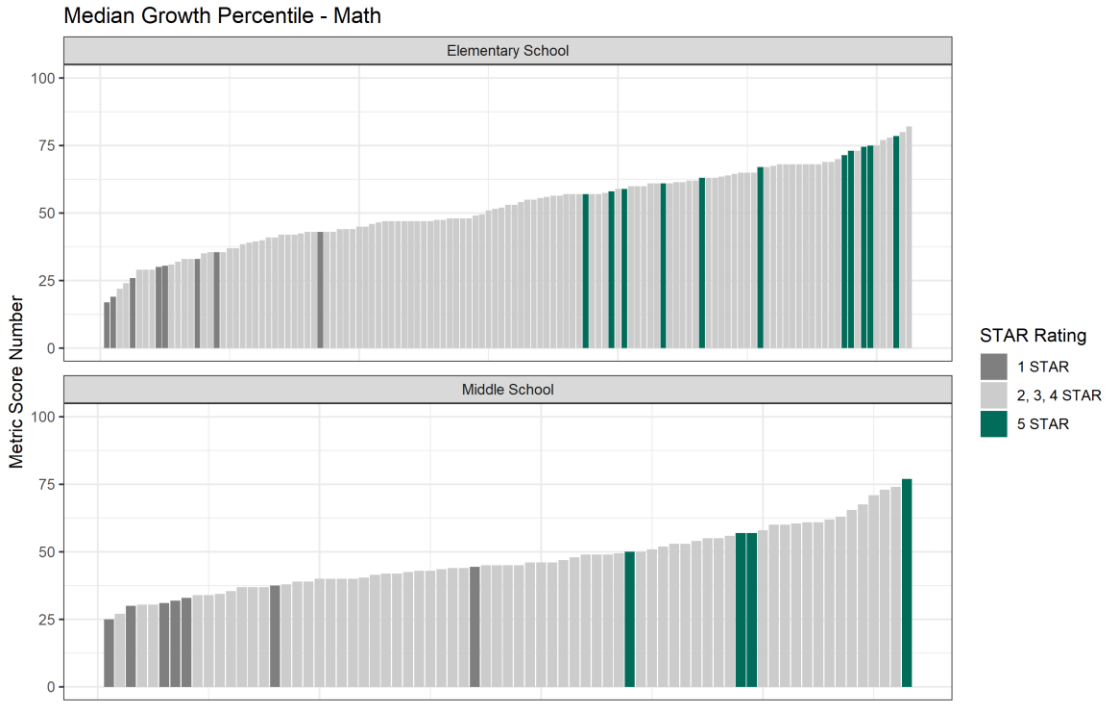


Figure 41

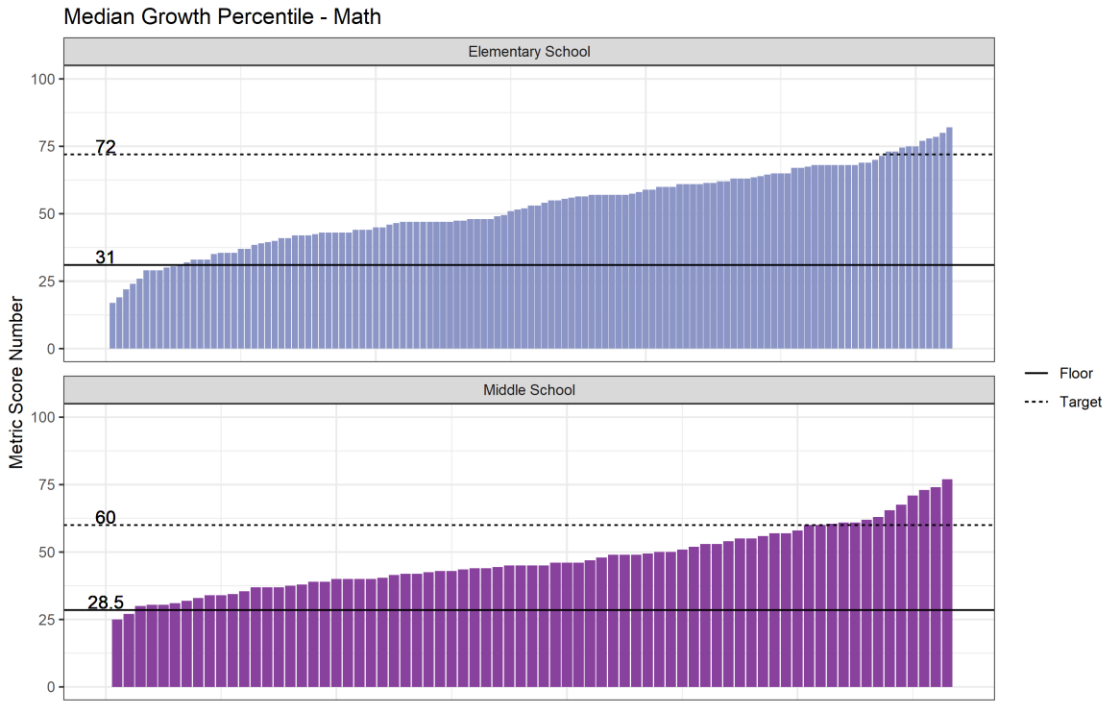


Figure 42

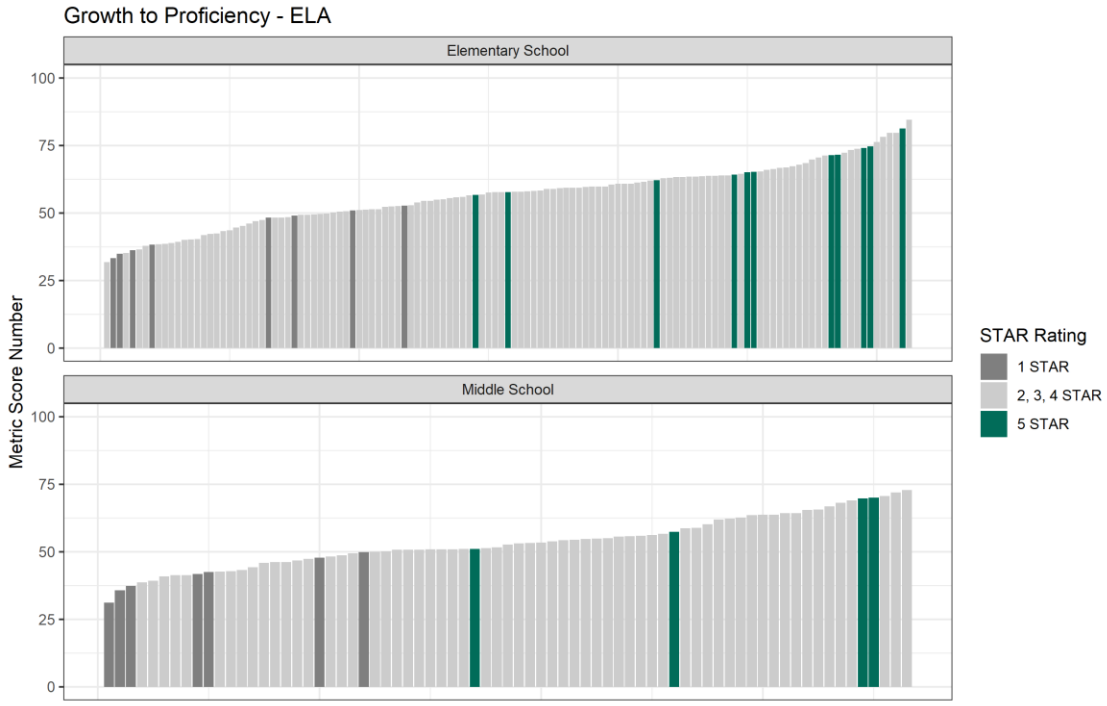

Growth to Proficiency - ELA
Elementary School
Middle School
Metric Score Number
100
75
50
25
0
STAR Rating
1 STAR
2, 3, 4 STAR
5 STAR

Figure 43

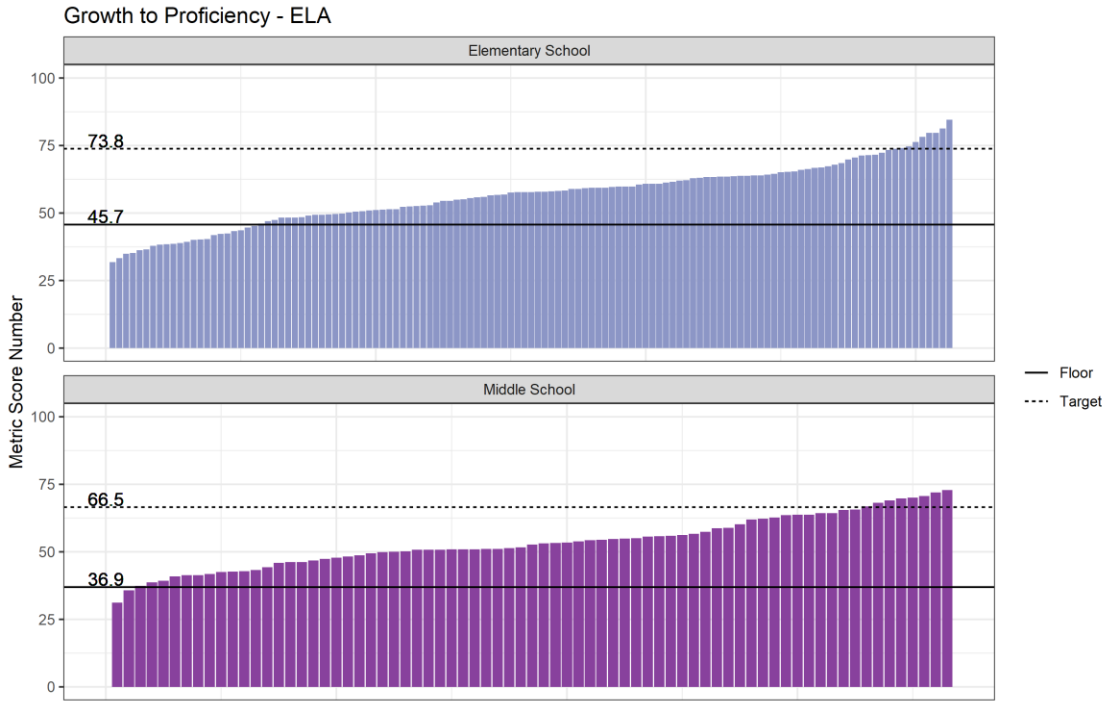


Figure 44

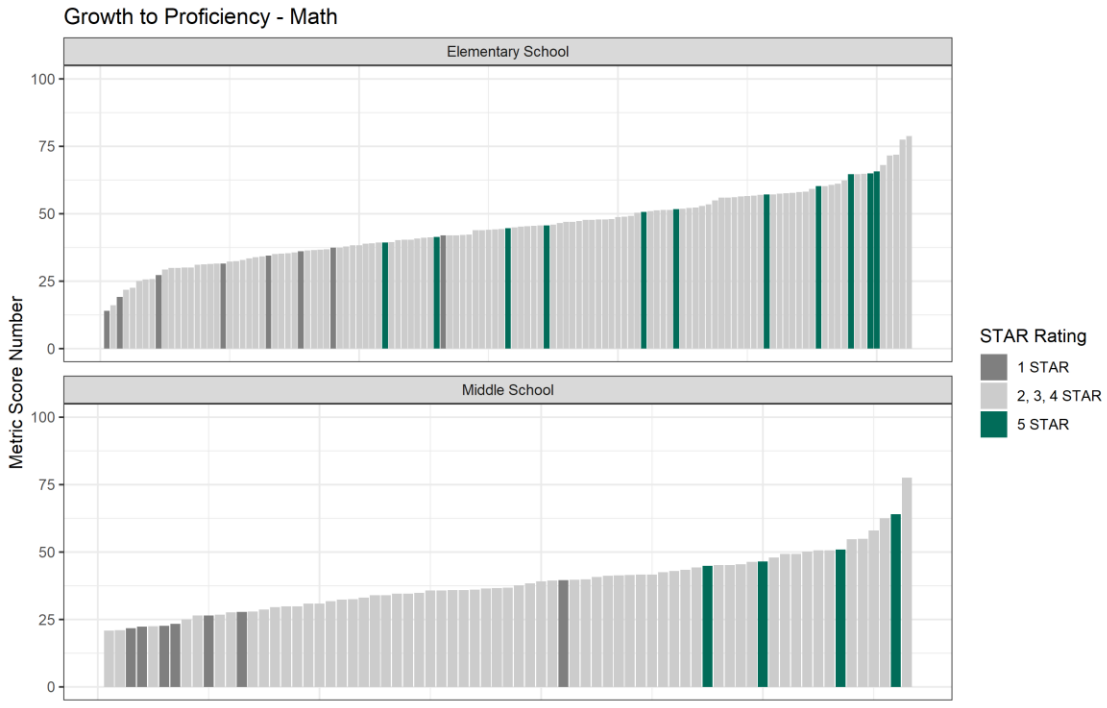


Figure 45

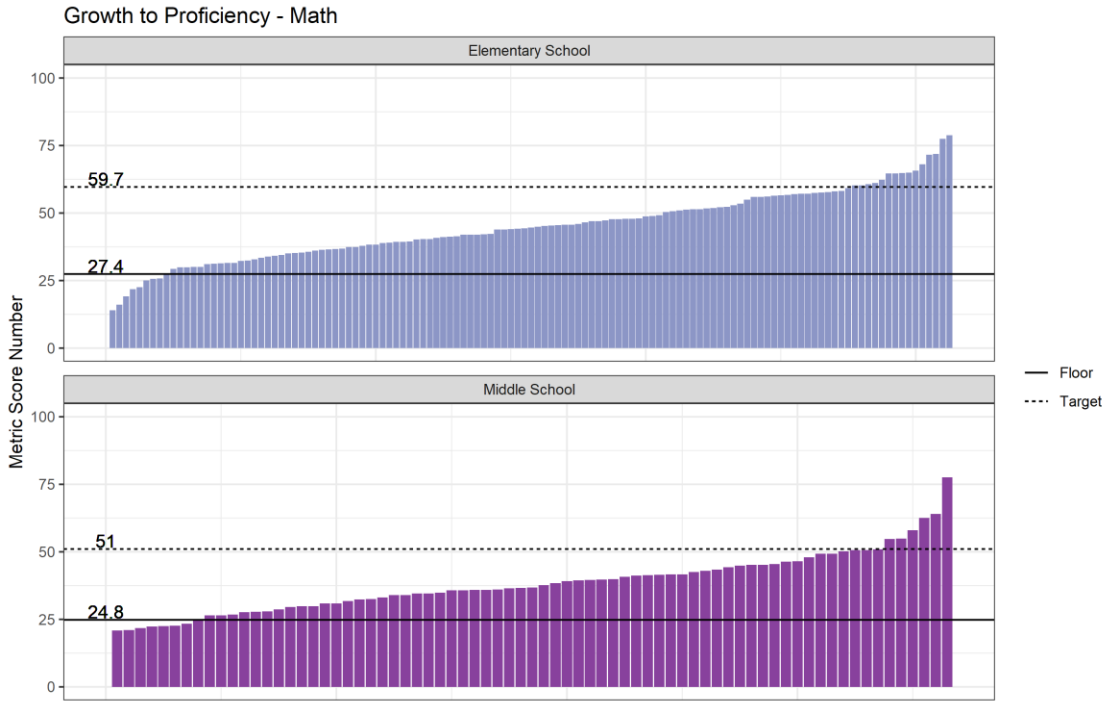


Figure 46

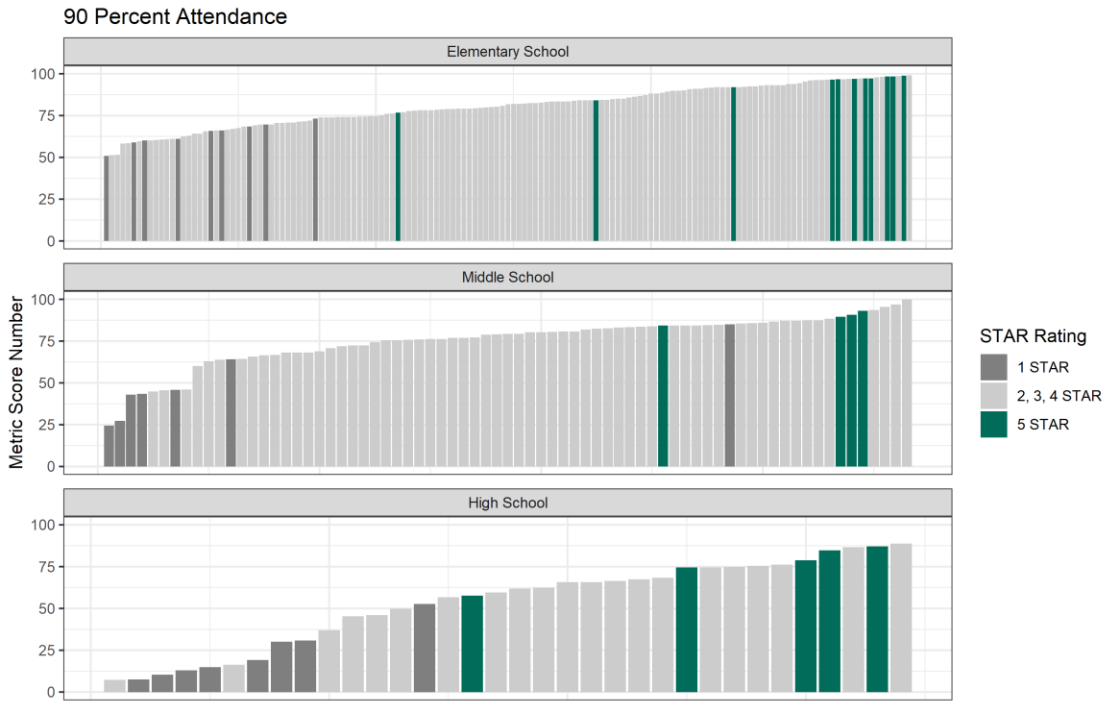


Figure 47

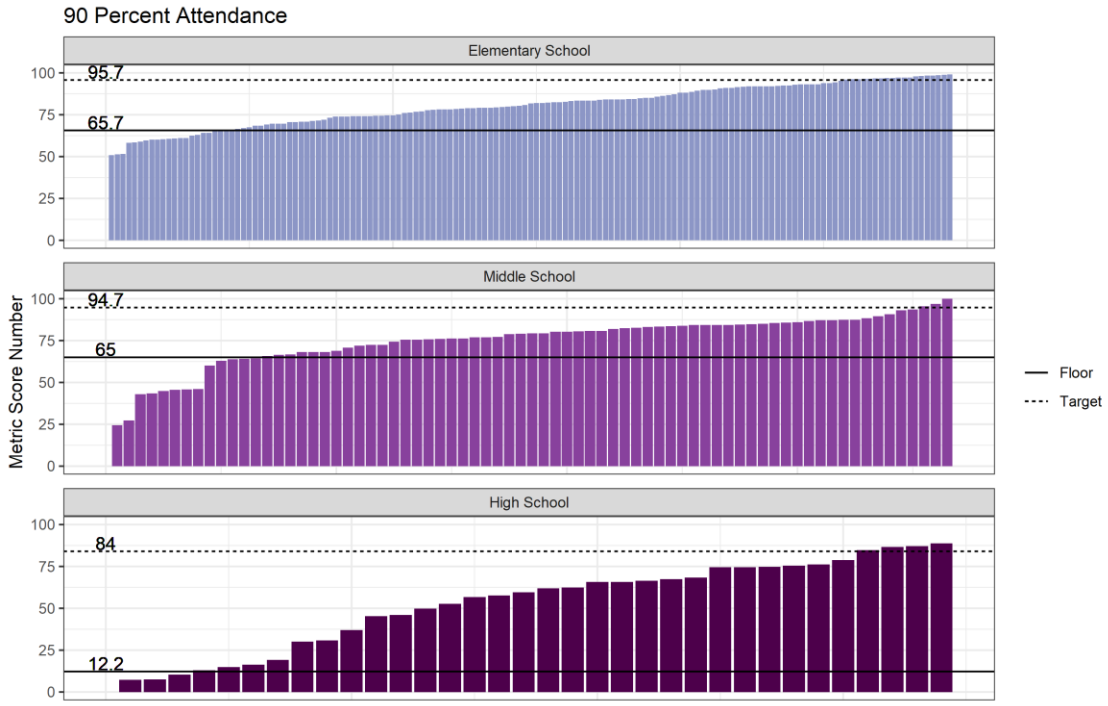


Figure 48

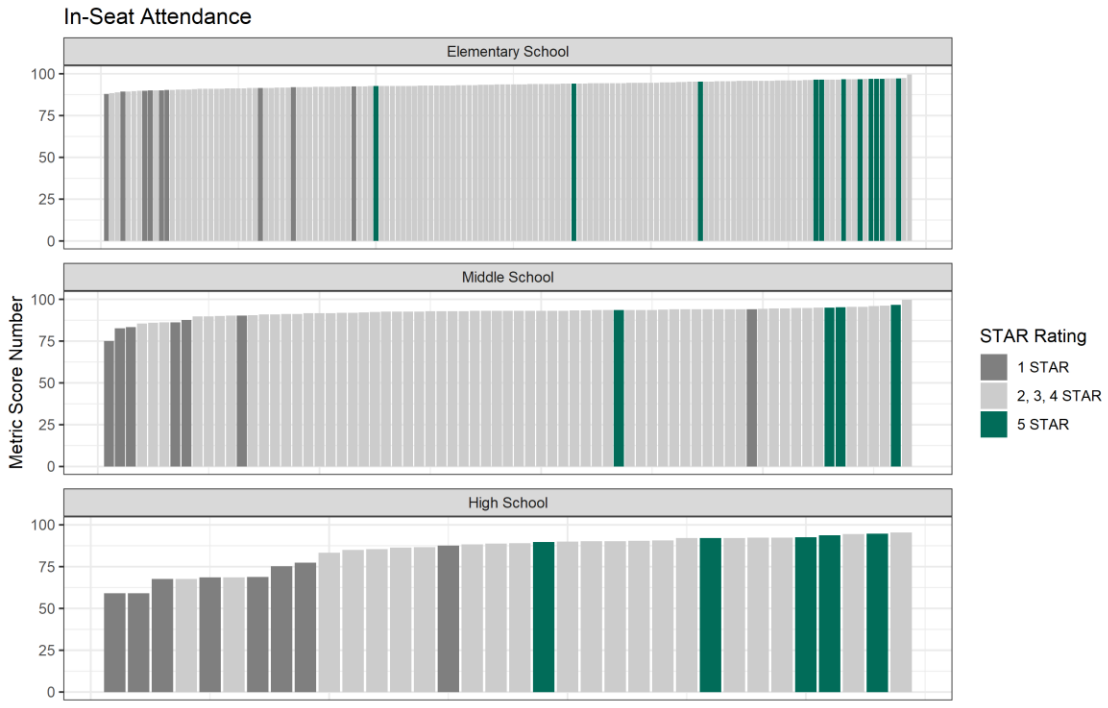


Figure 49

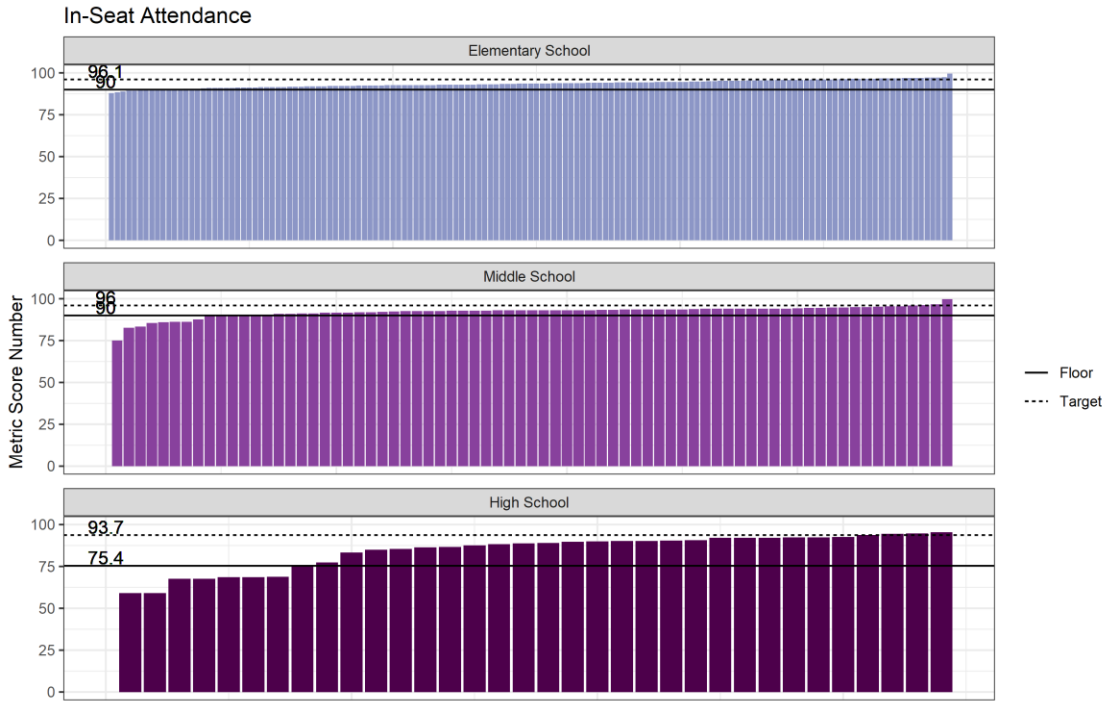


Figure 50

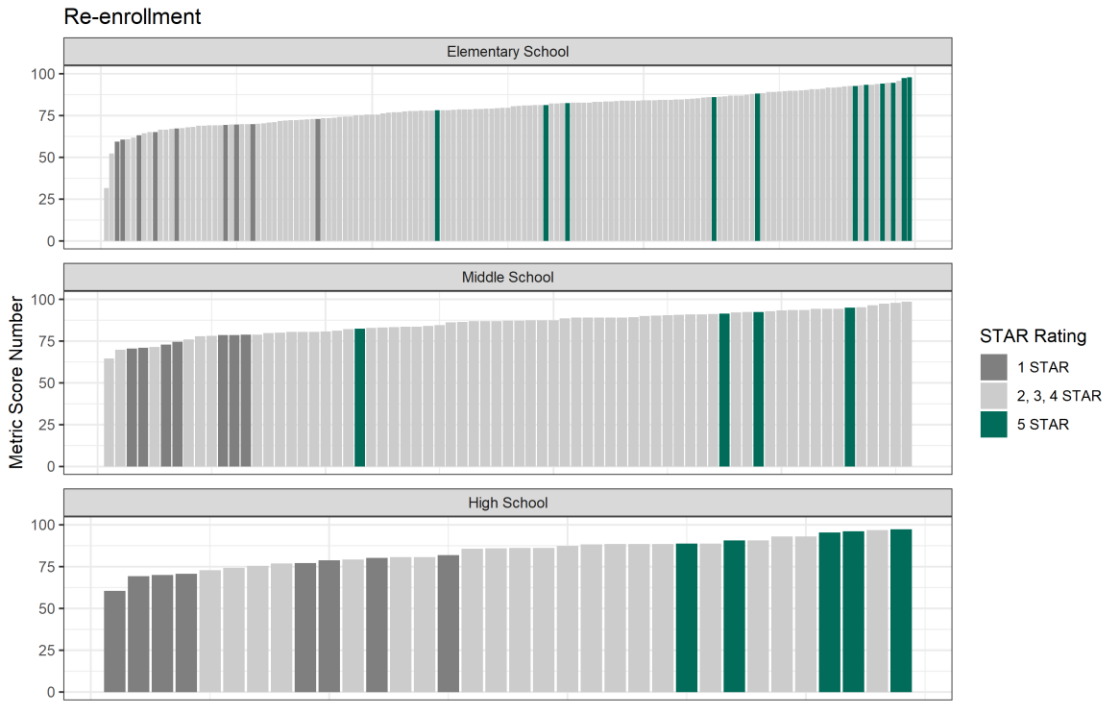


Figure 51

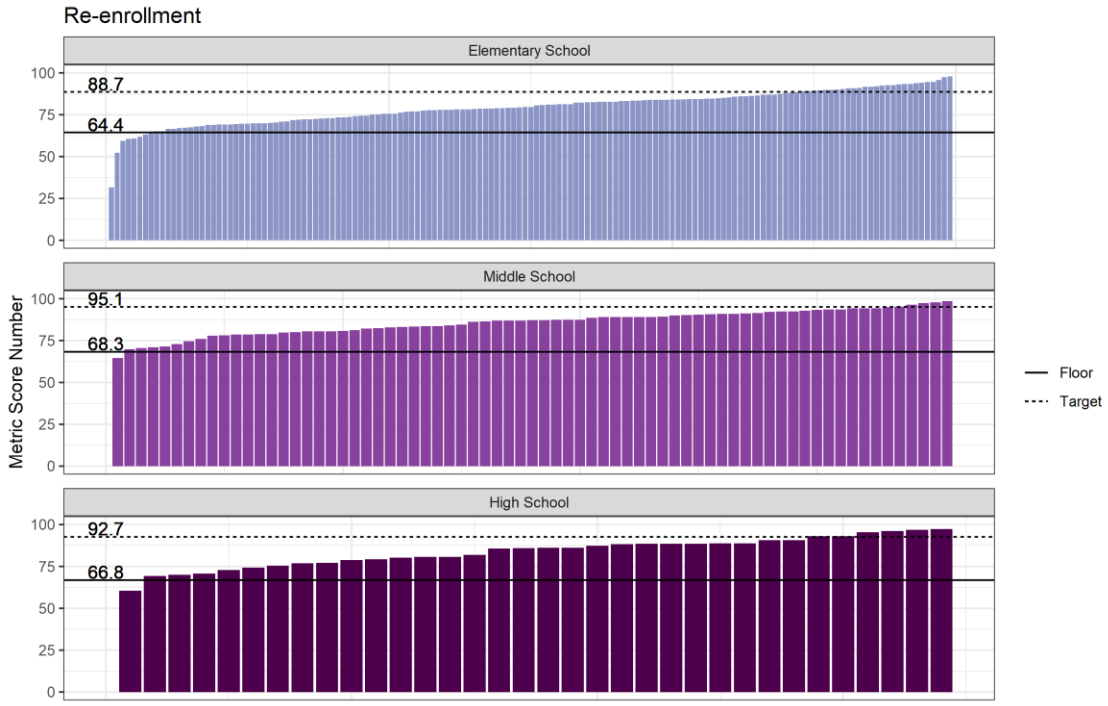


Figure 52

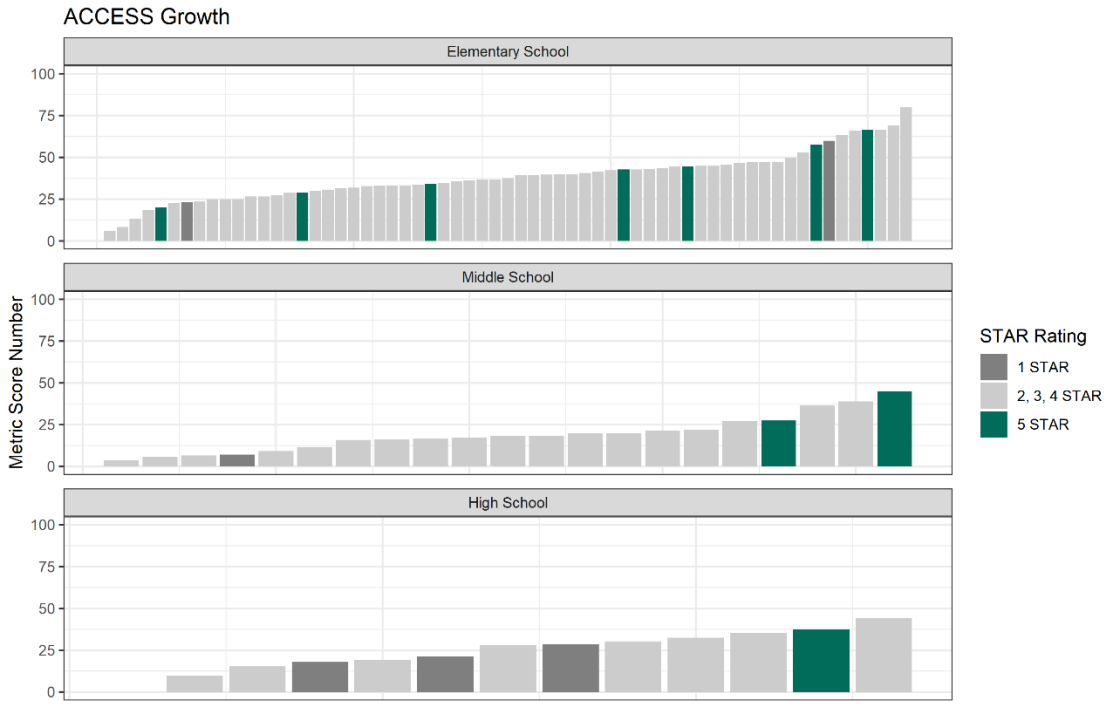


Figure 53

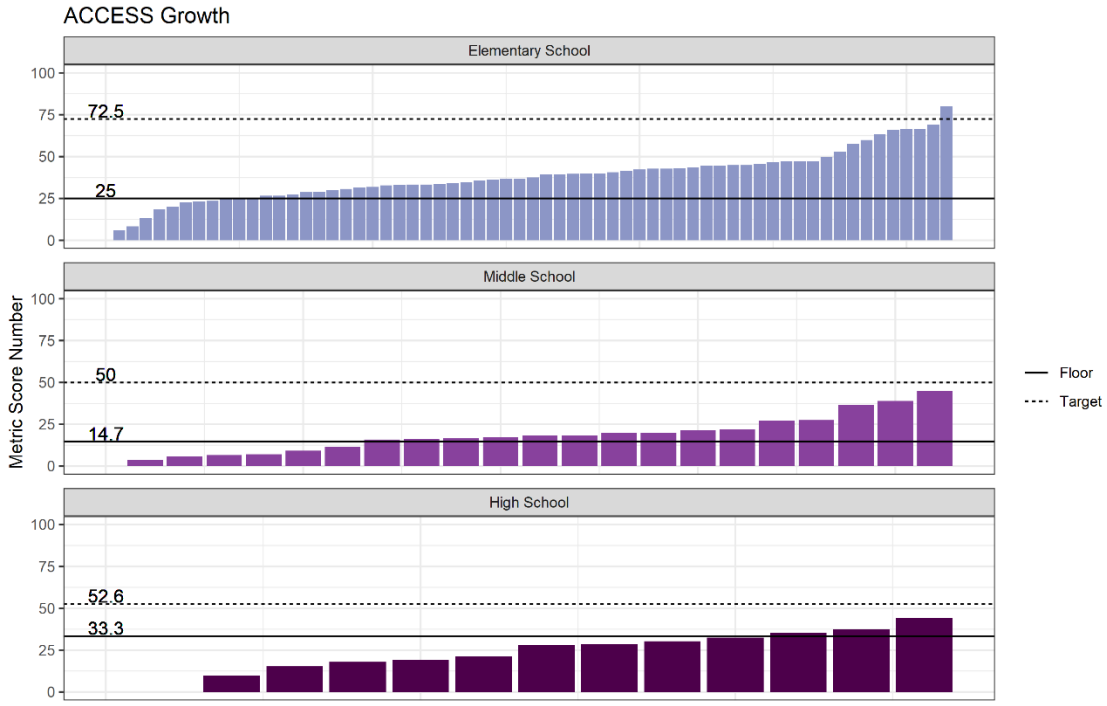


Figure 54

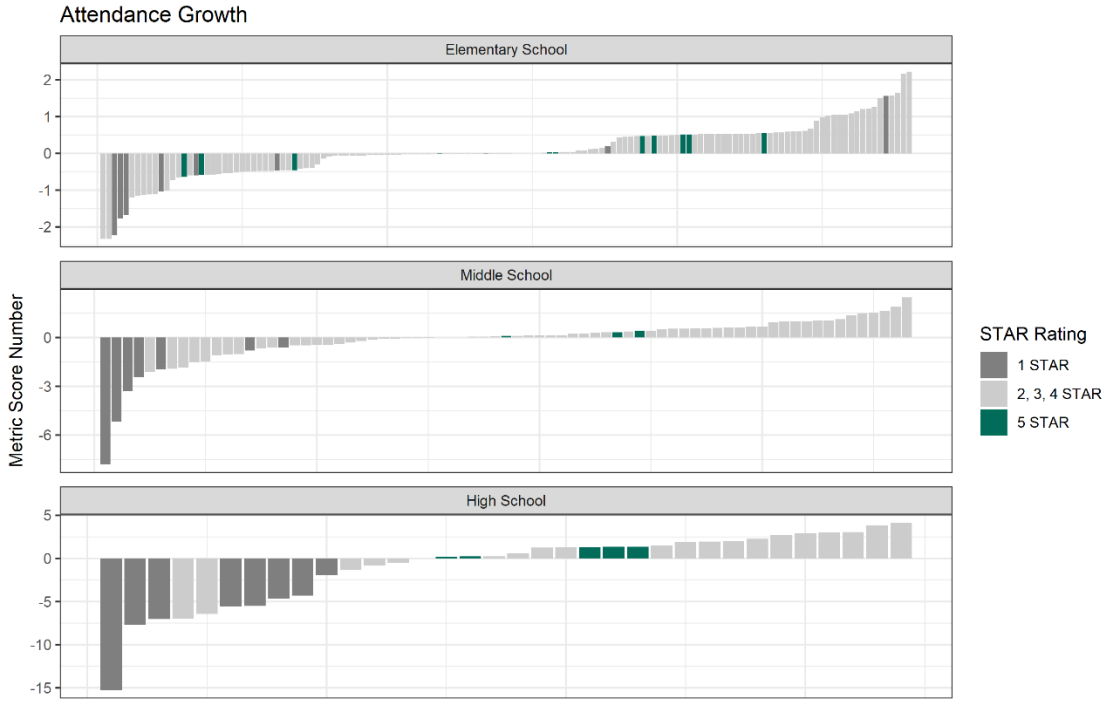
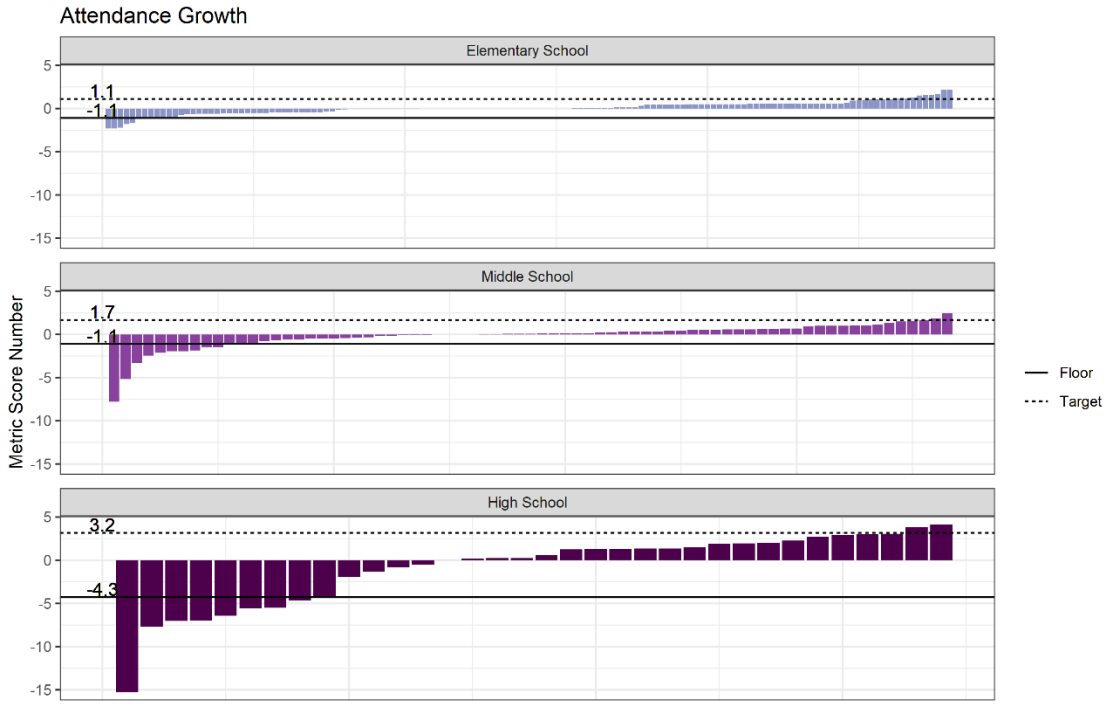


Figure 55


Attendance Growth
Elementary School
Middle School
High School
Metric Score Number
1.1
-1.1
1.7
-1.1
3.2
-4.3
5
0
-5
-10
-15
Floor
Target

Metric Distributions: Elementary School Framework

Figure 56

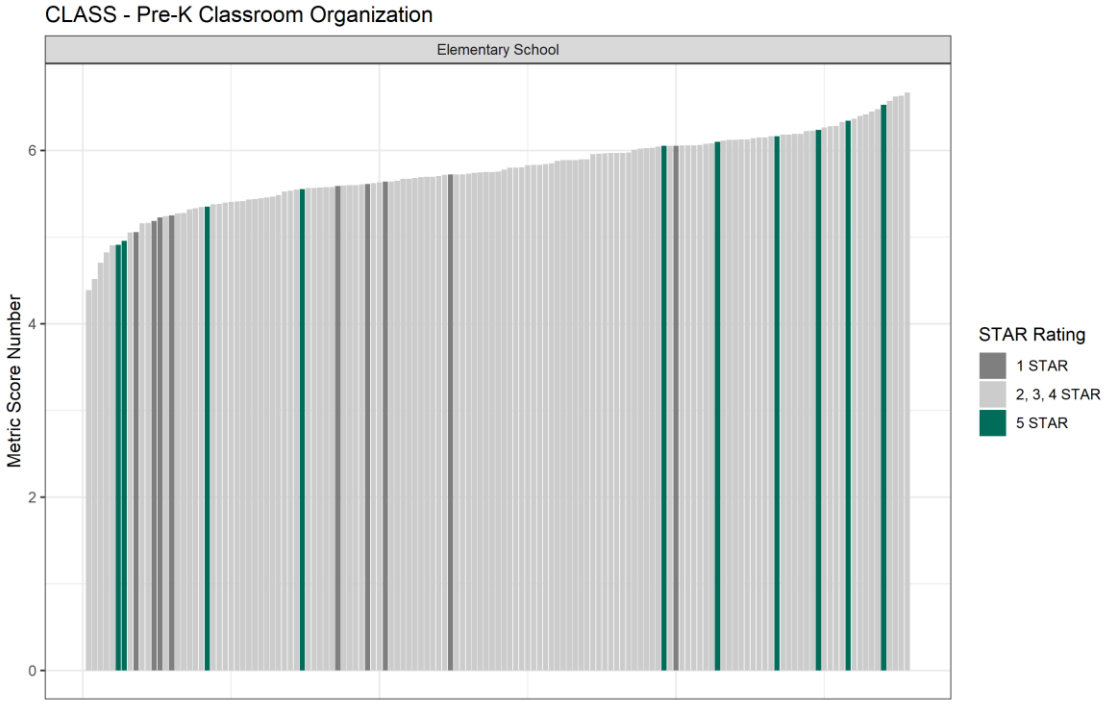


Figure 57

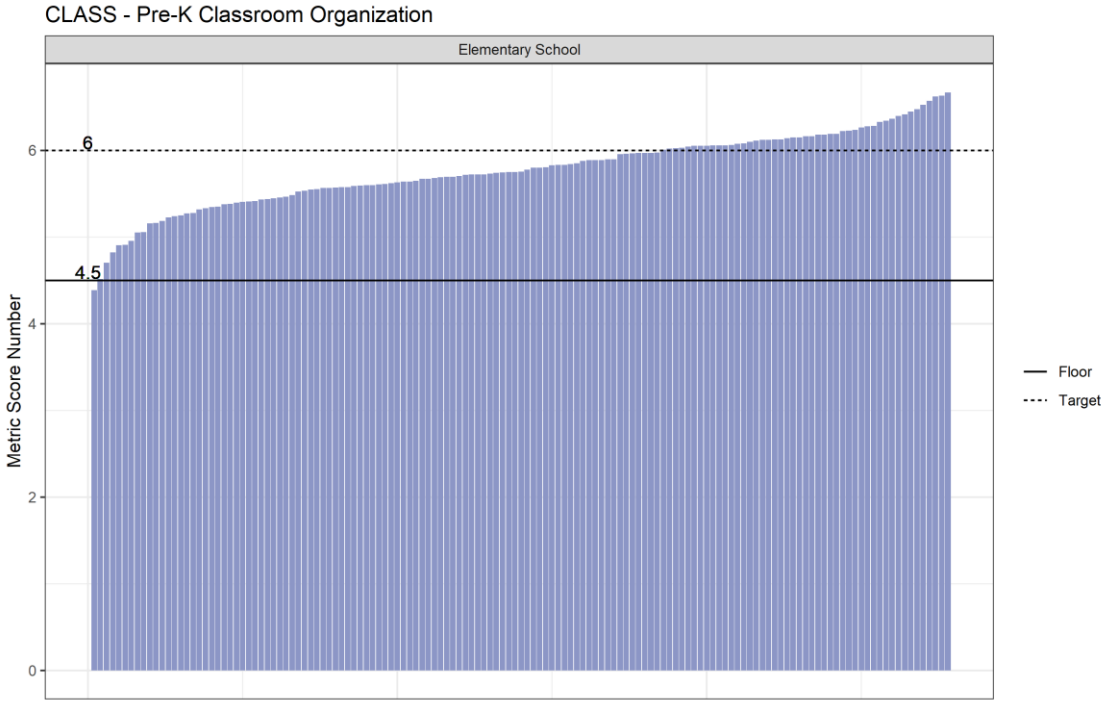


Figure 58

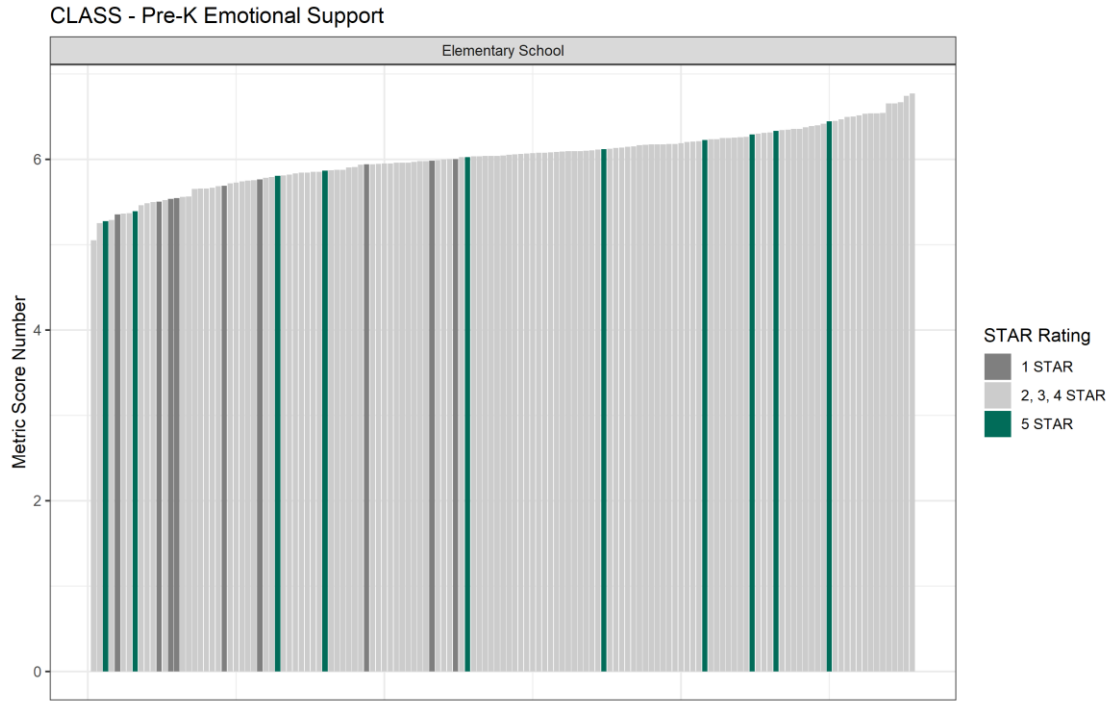


Figure 59

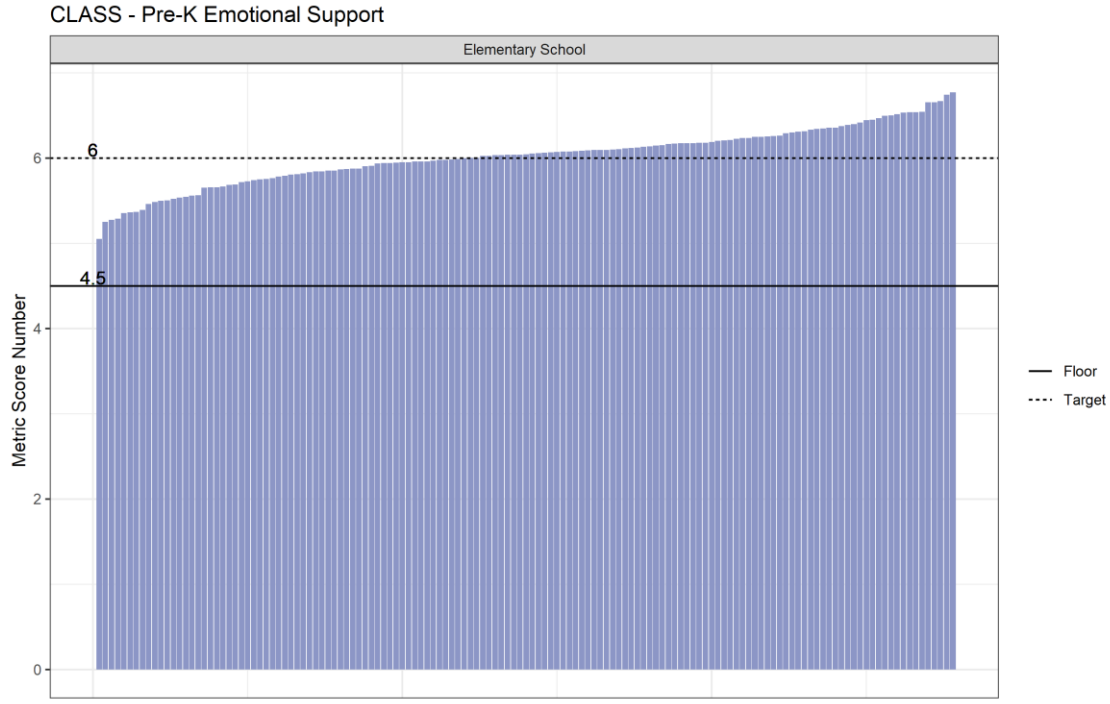


Figure 60

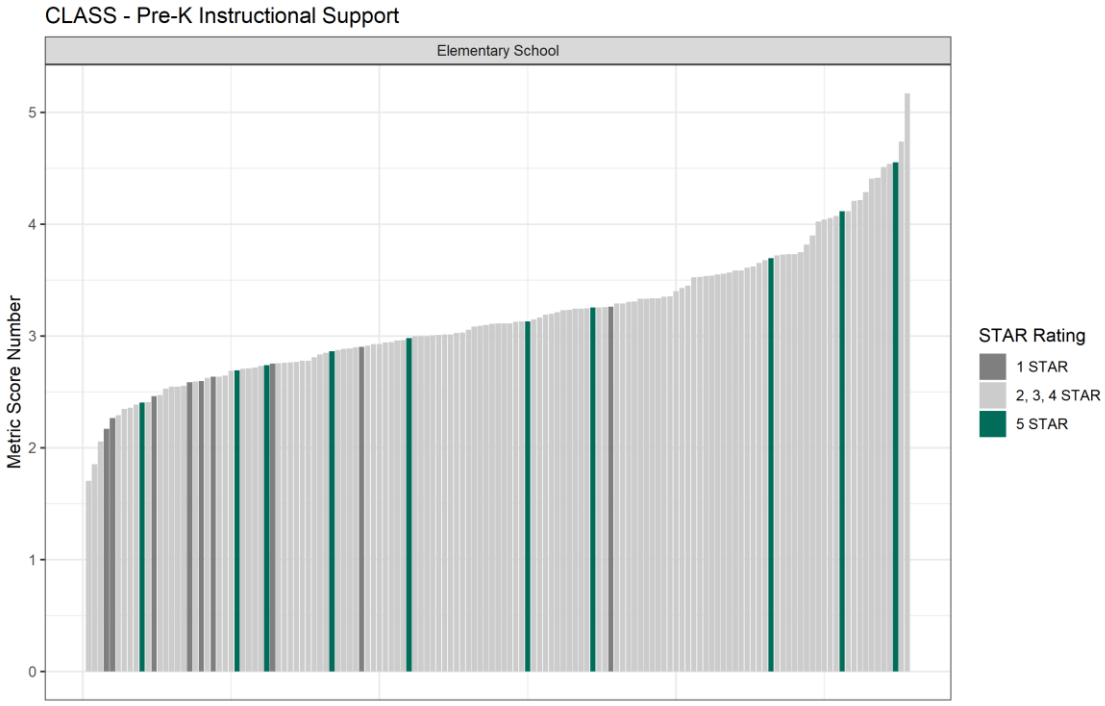
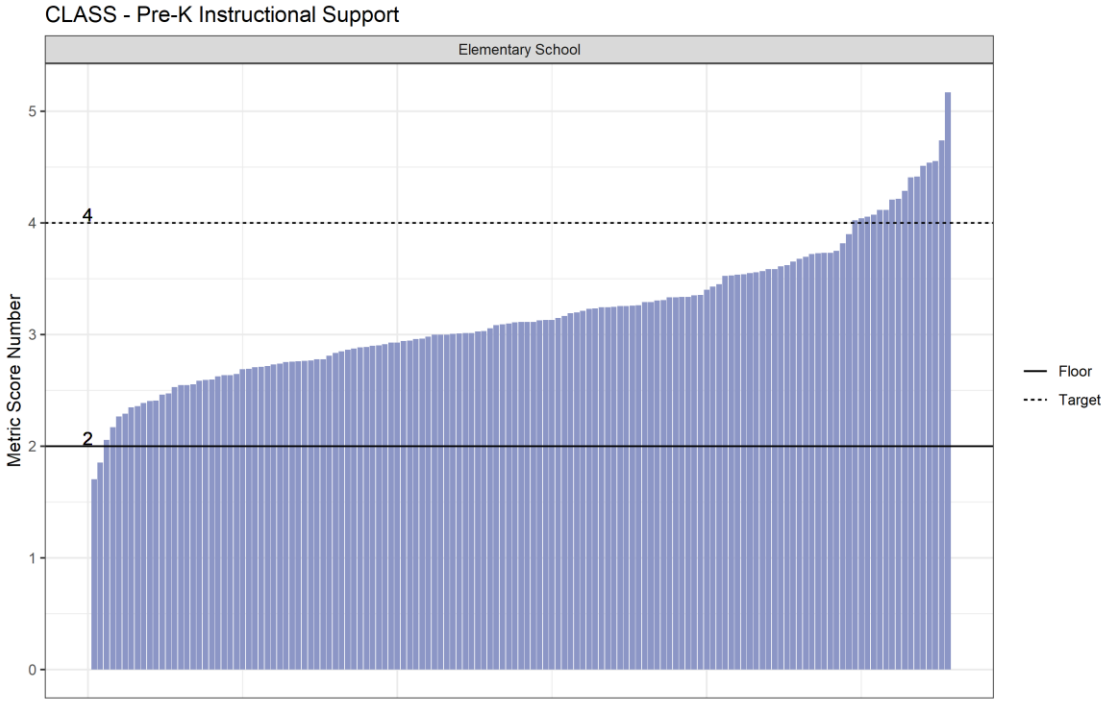


Figure 61



Metric Distributions: High School Framework

Figure 62

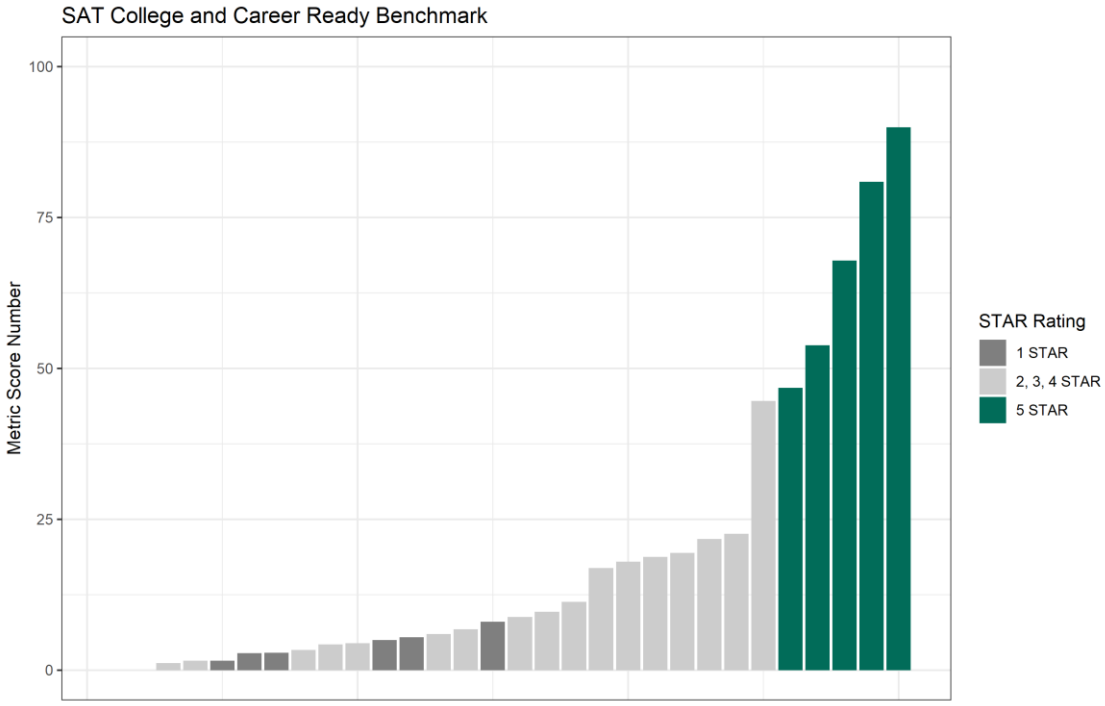


Figure 63

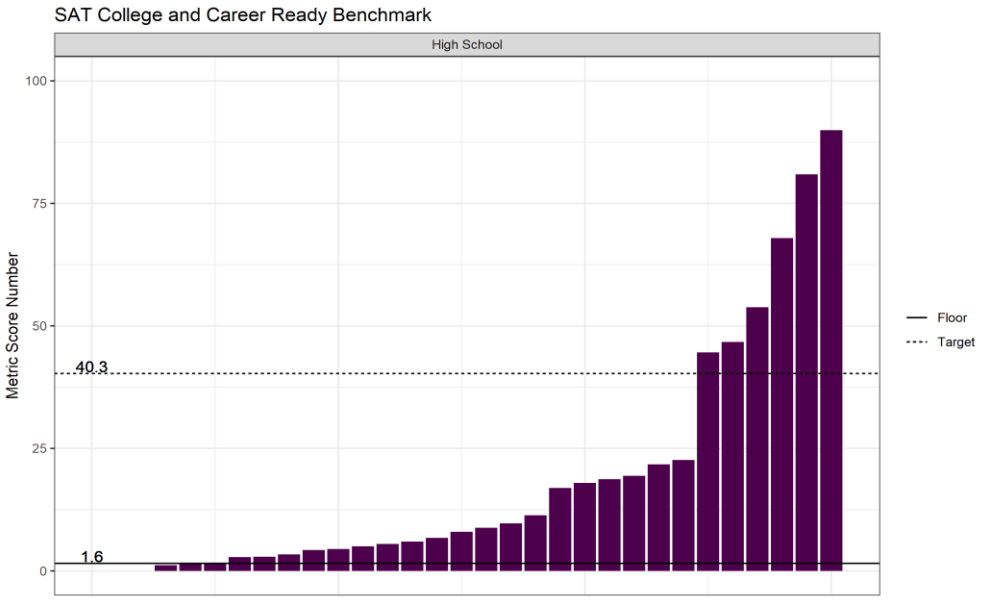


Figure 64

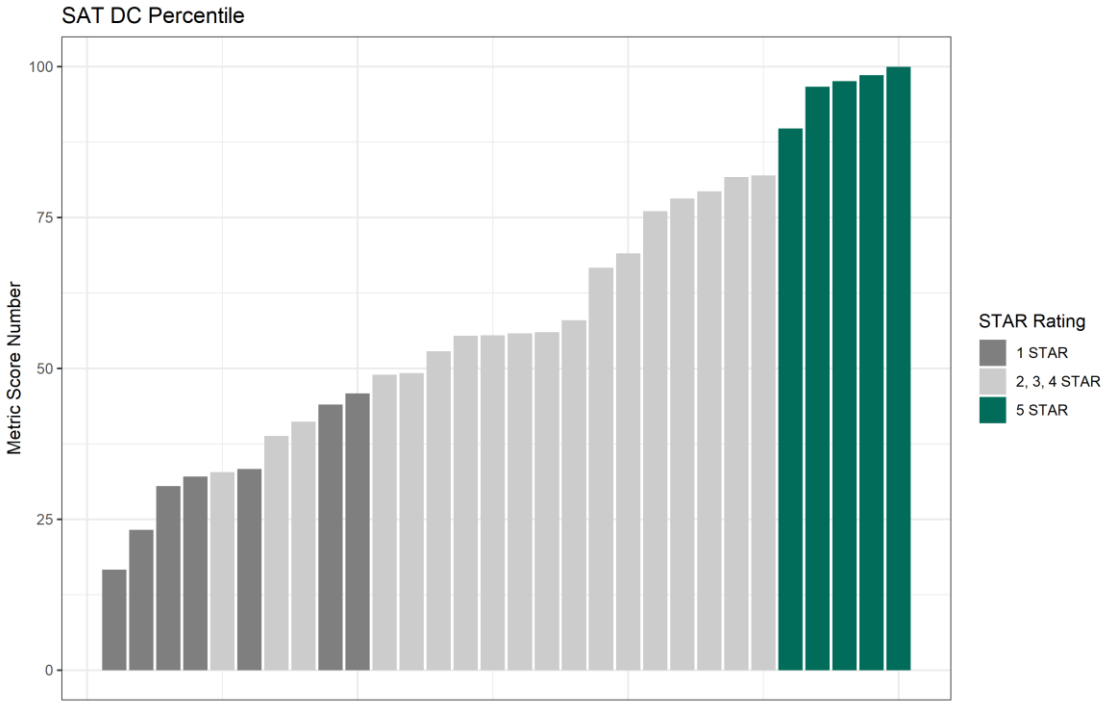


Figure 65

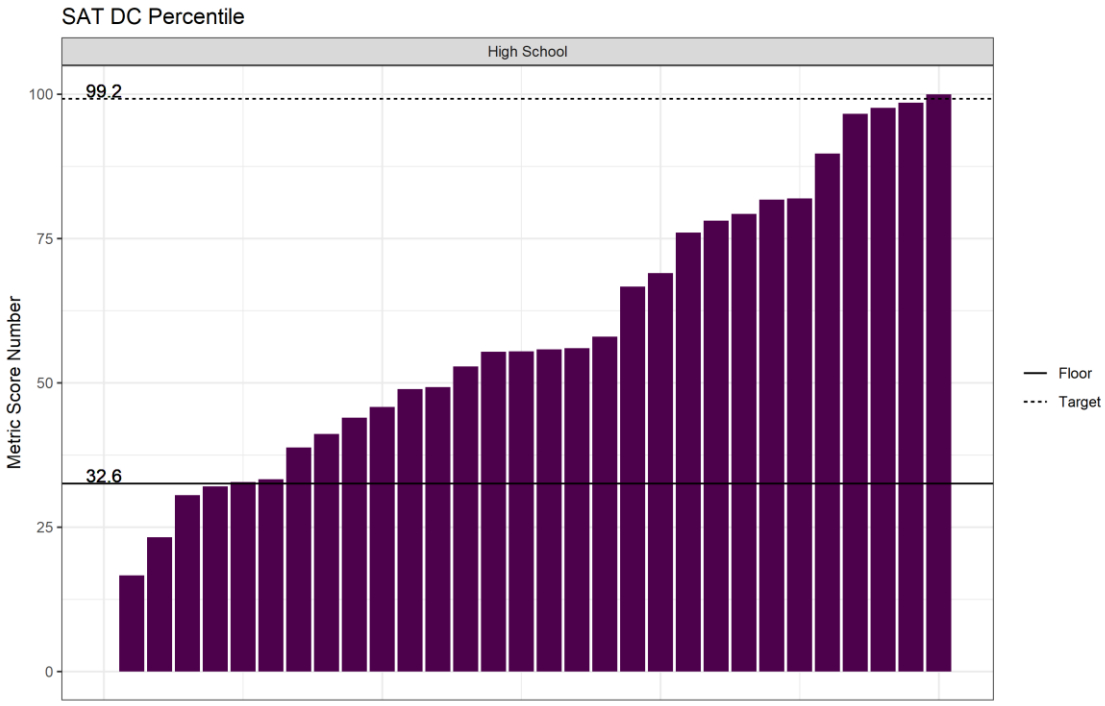


Figure 66

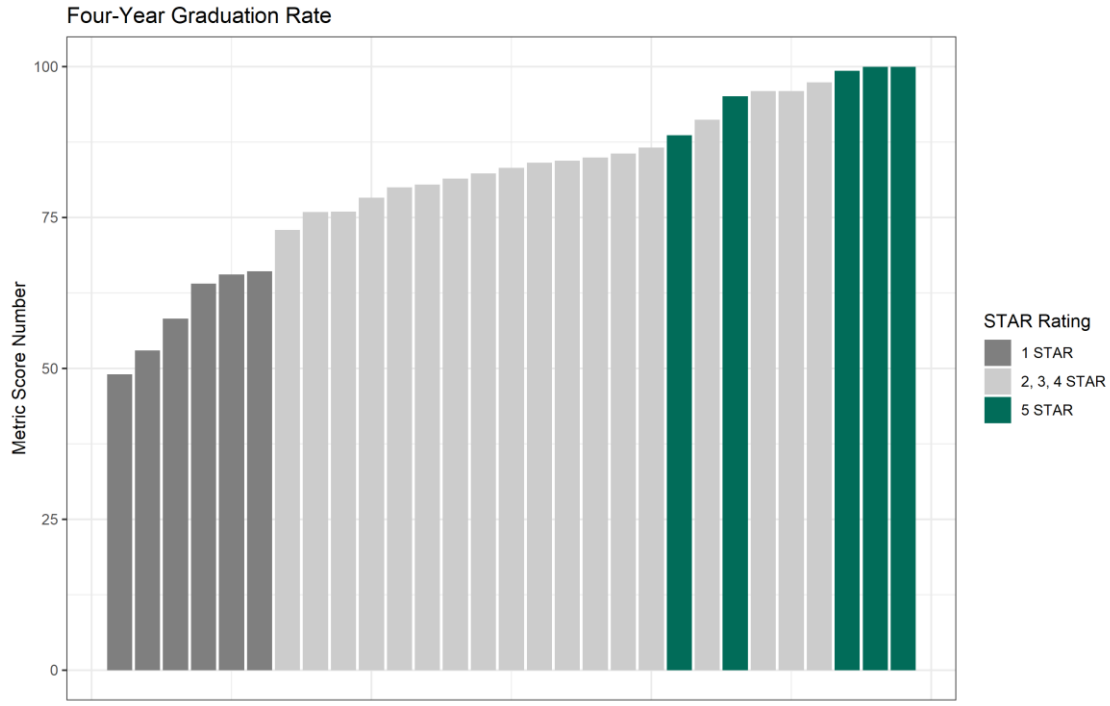


Figure 67

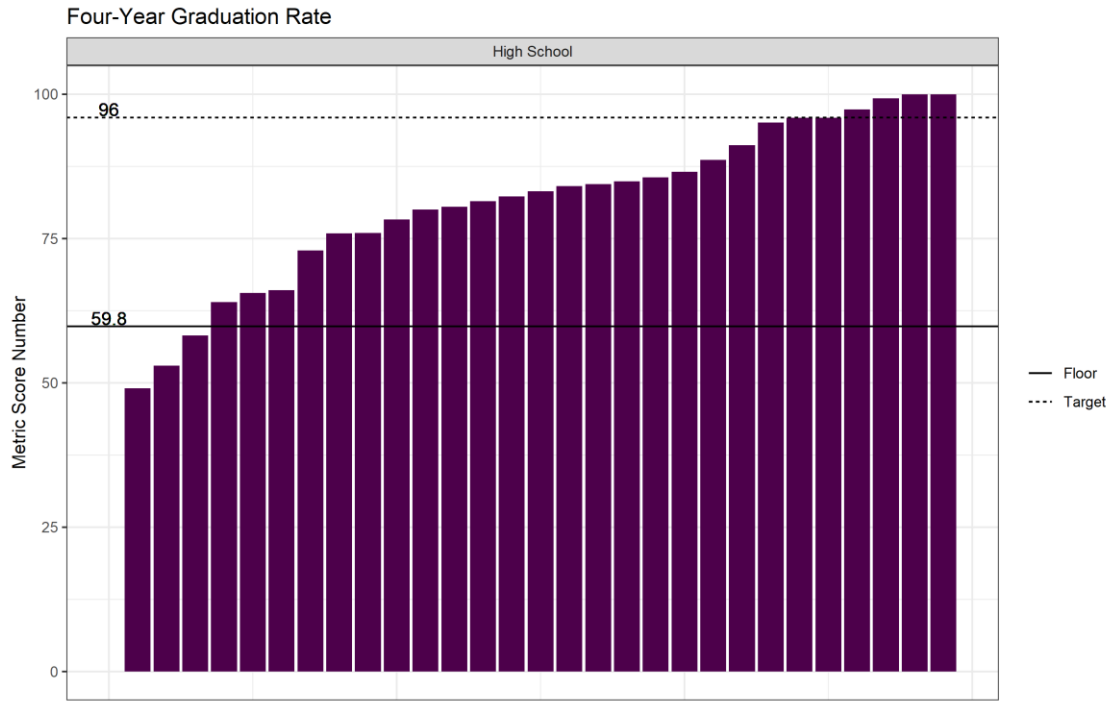


Figure 68

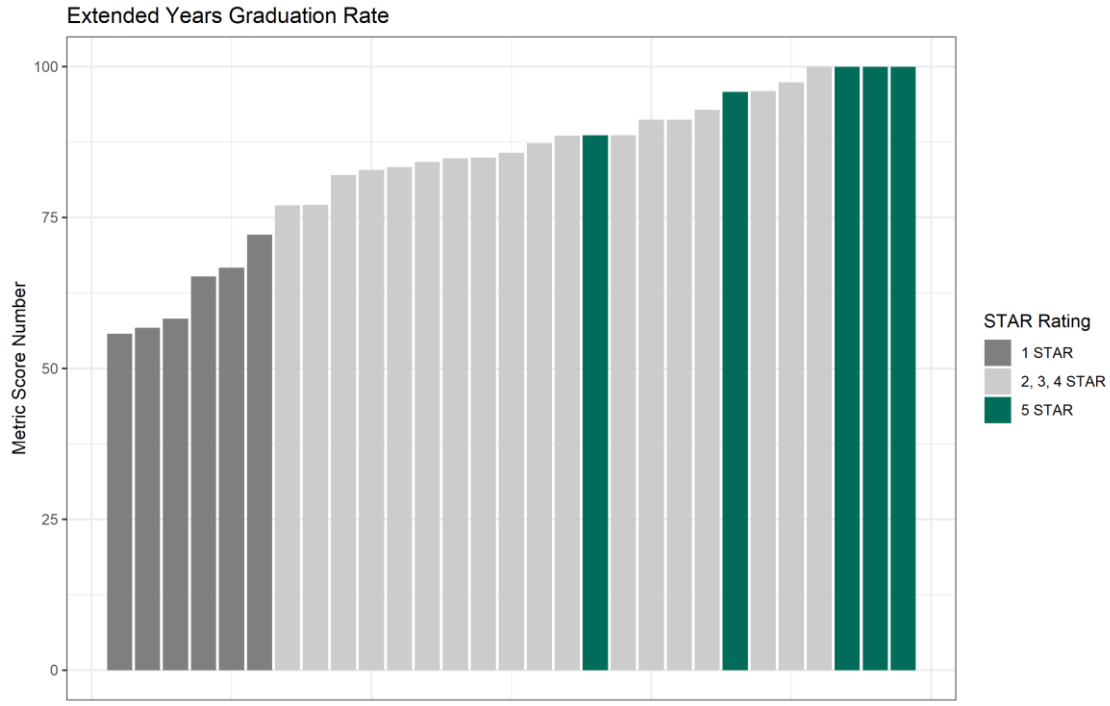


Figure 69

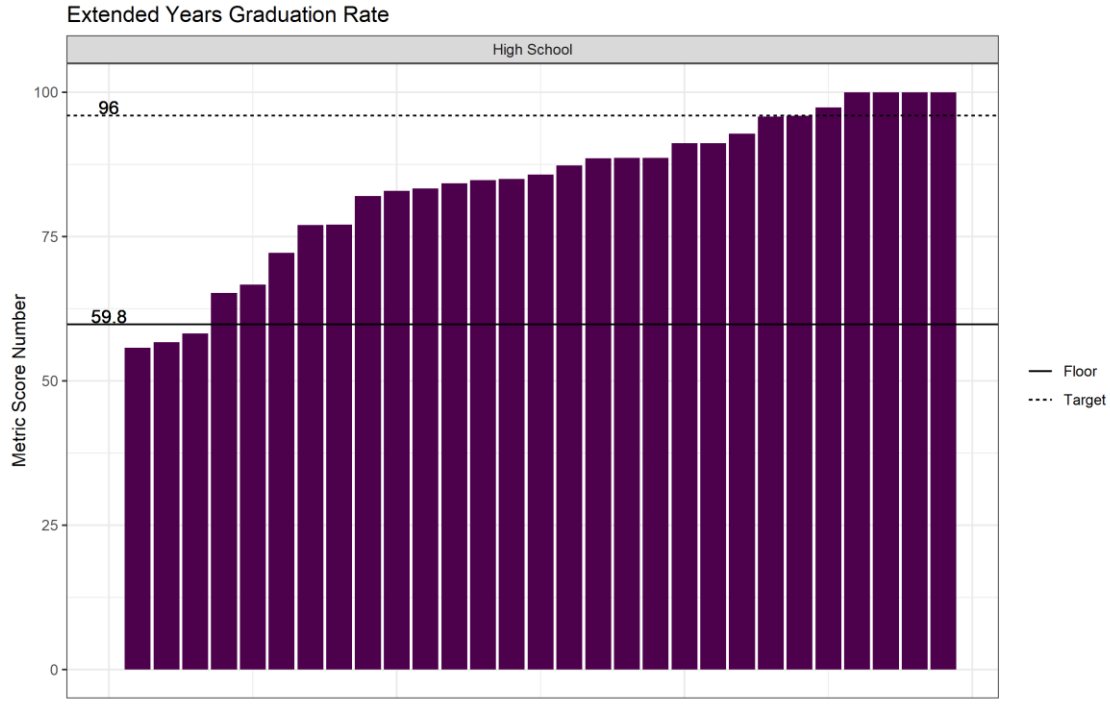


Figure 70

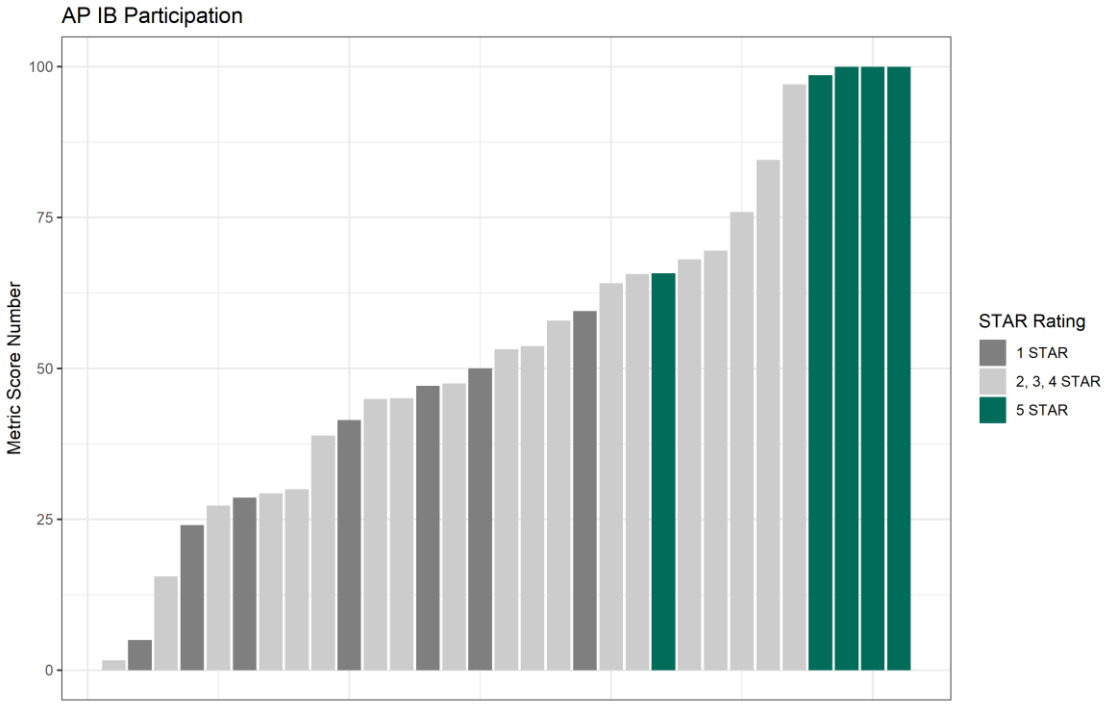


Figure 71

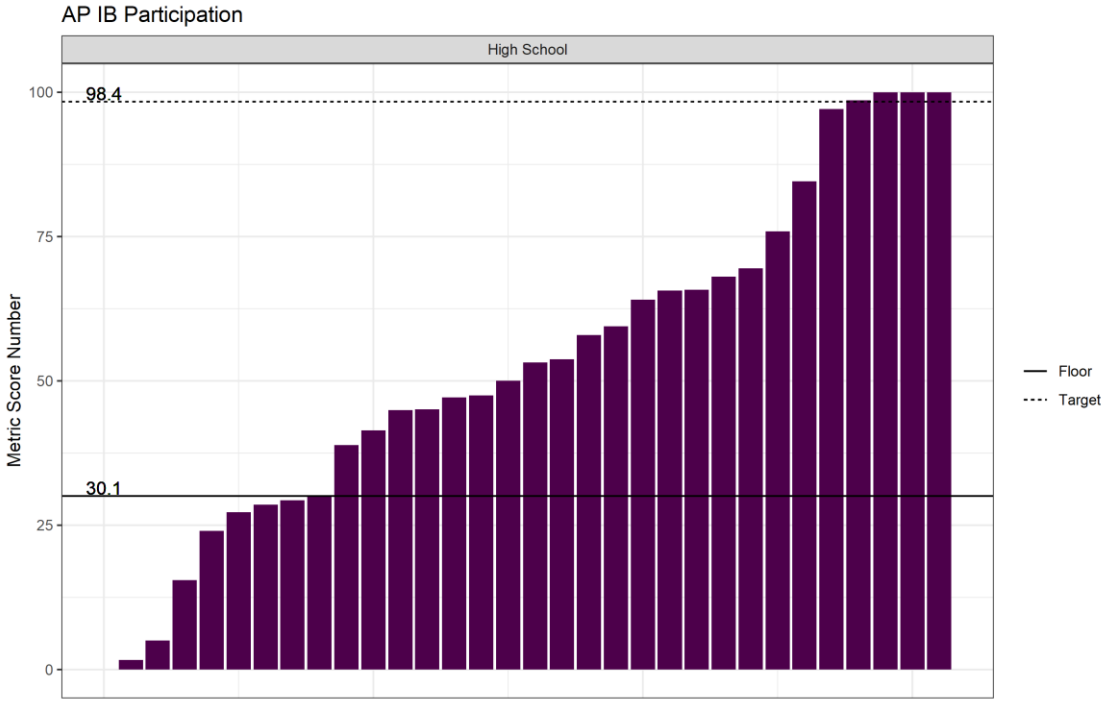


Figure 72

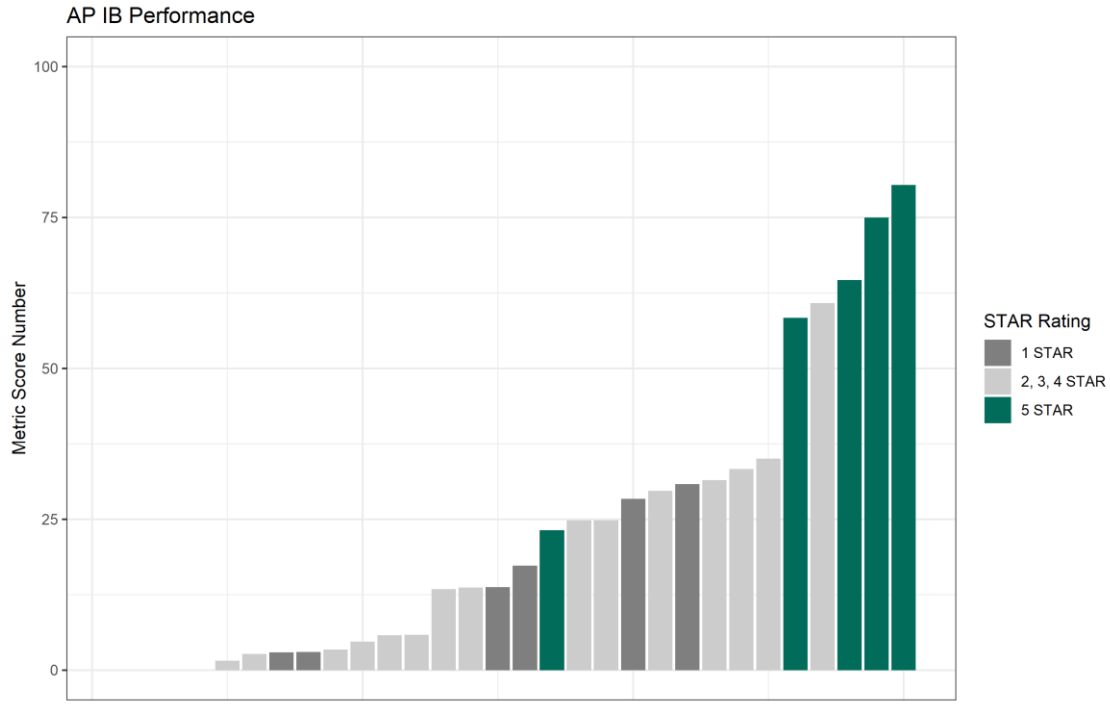
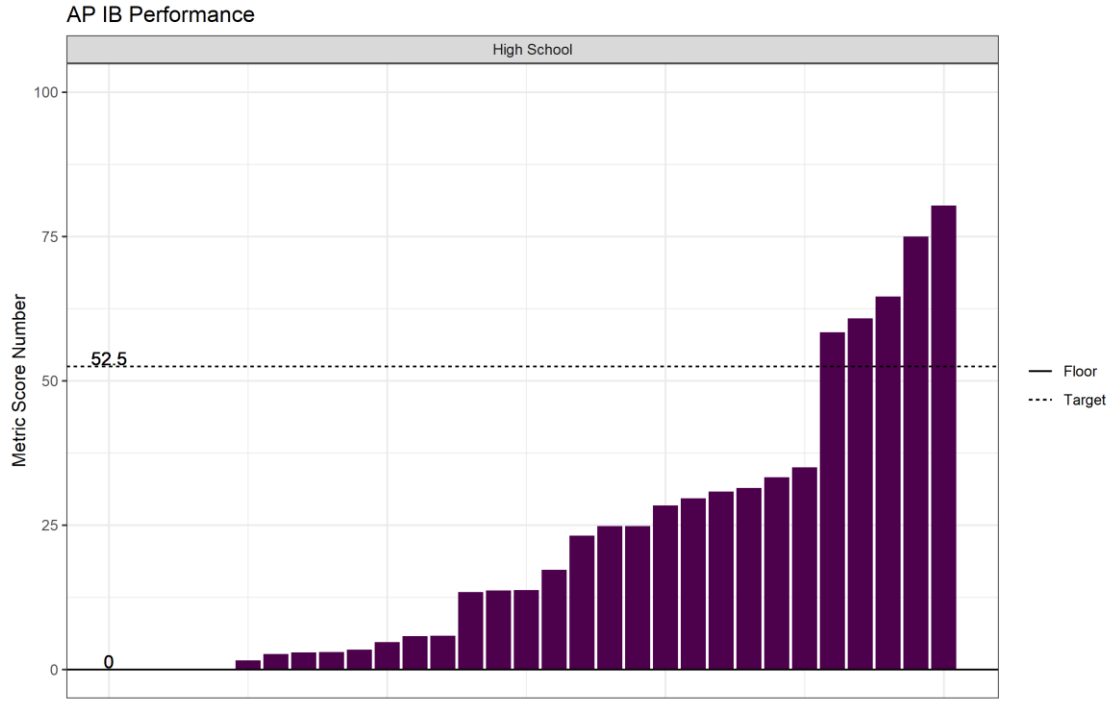


Figure 73



Metric Distributions: Alternative Framework

Figure 74

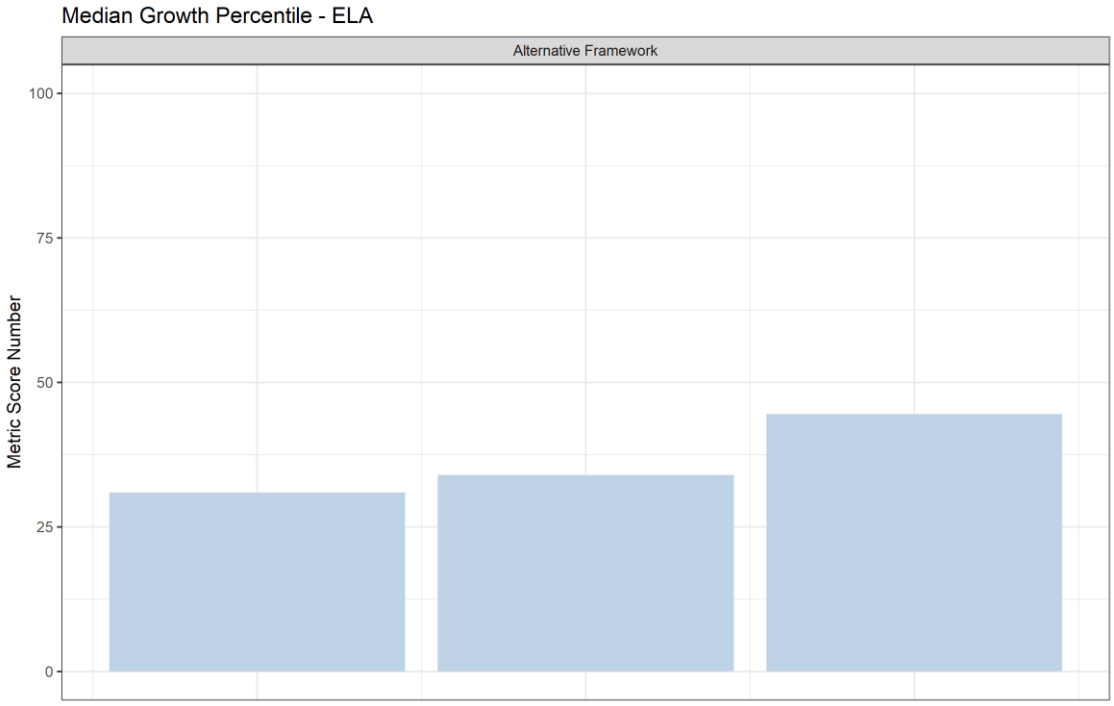


Figure 75

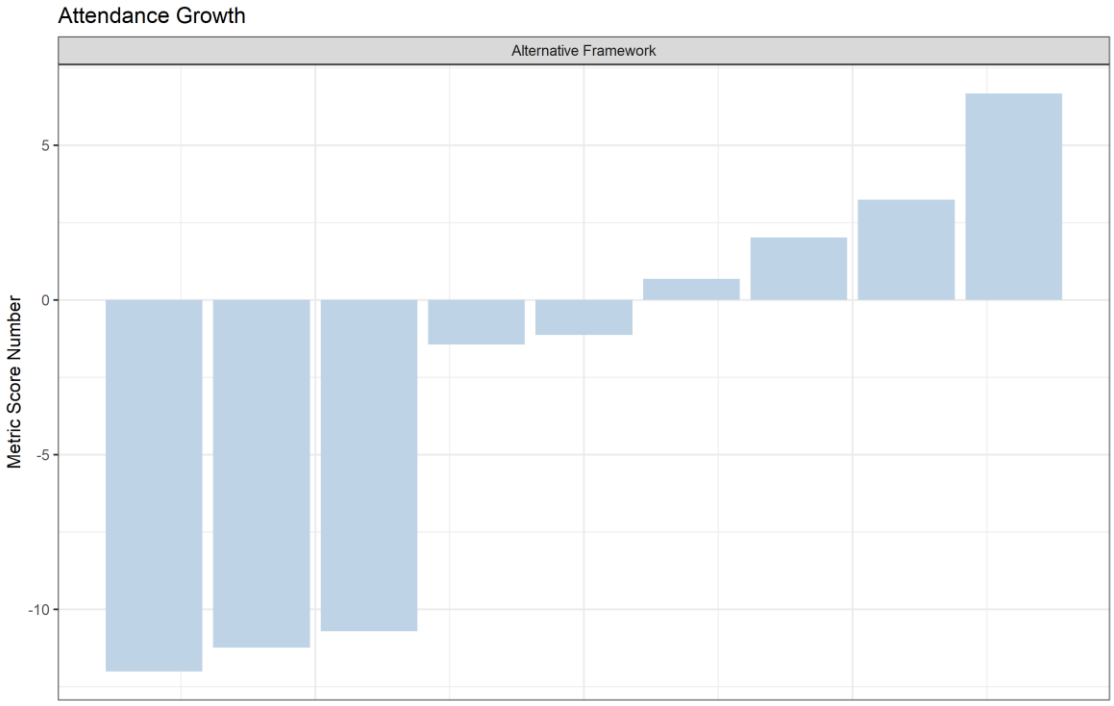


Figure 76

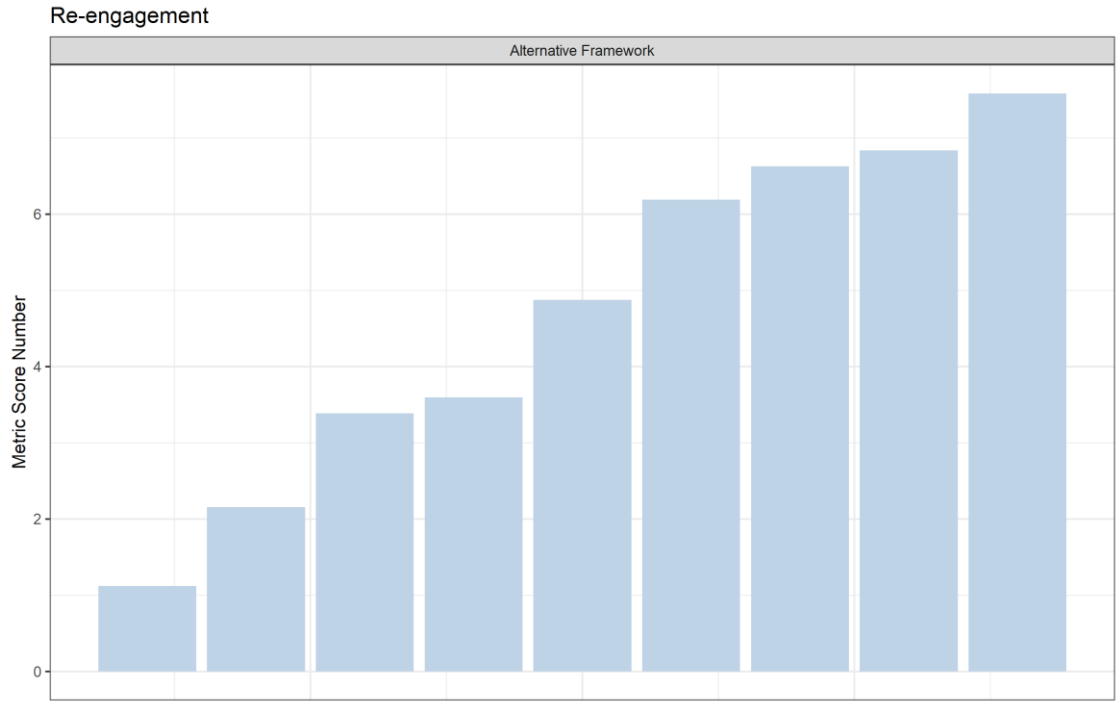


Figure 77

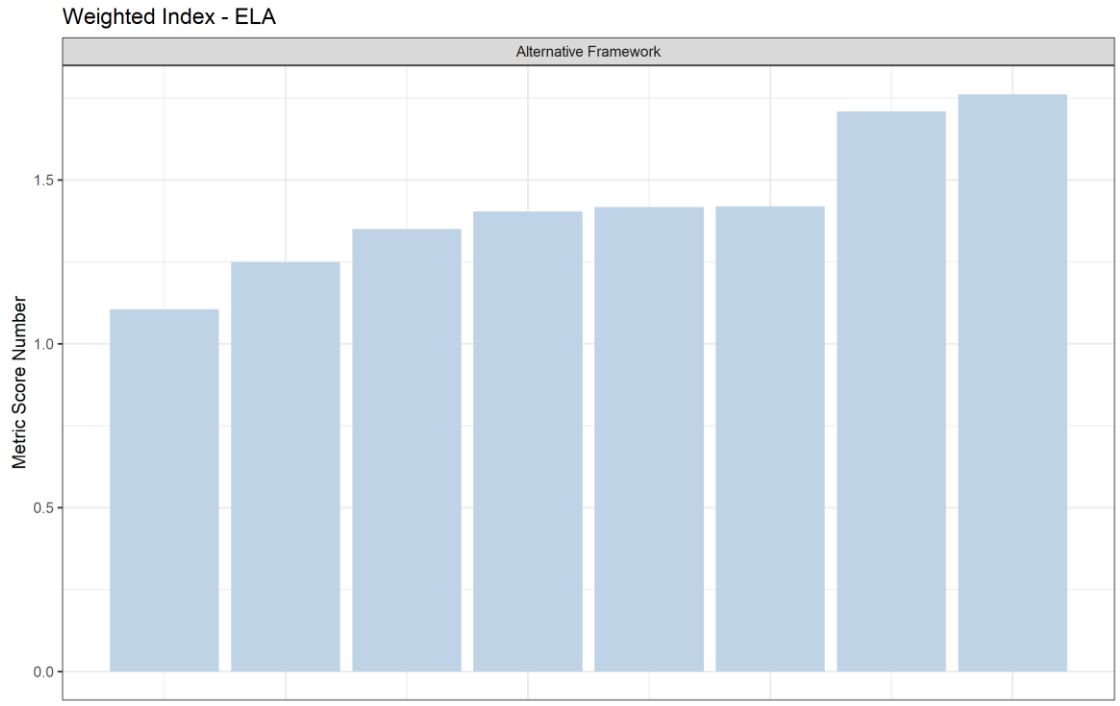


Figure 78

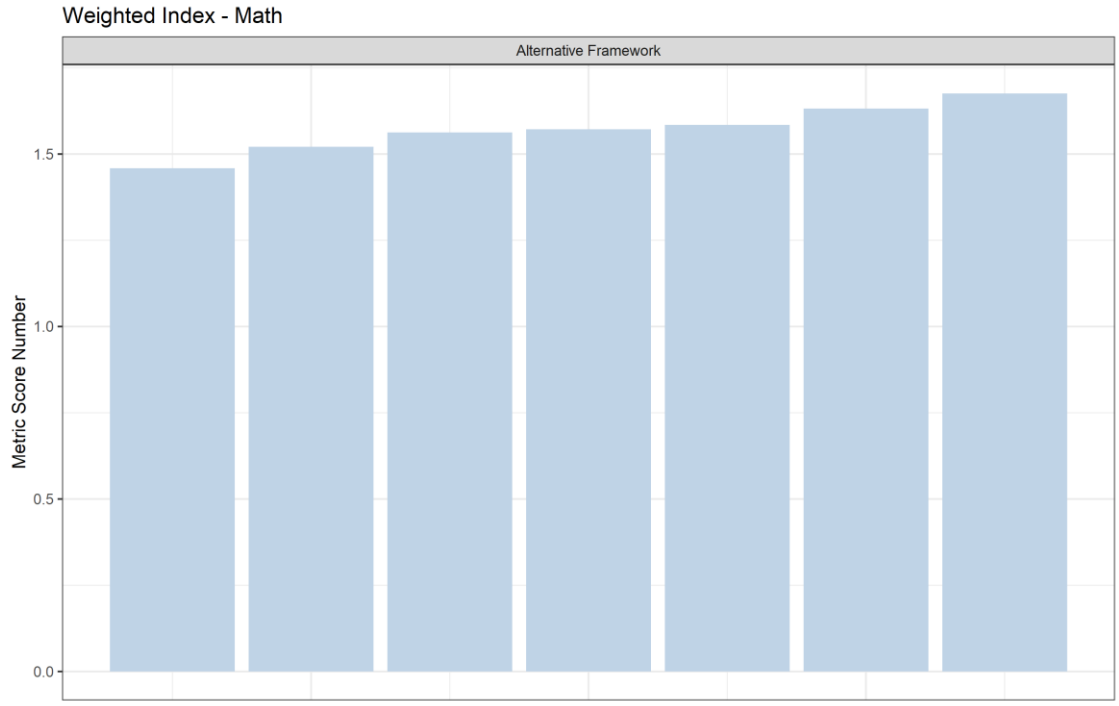


Figure 79

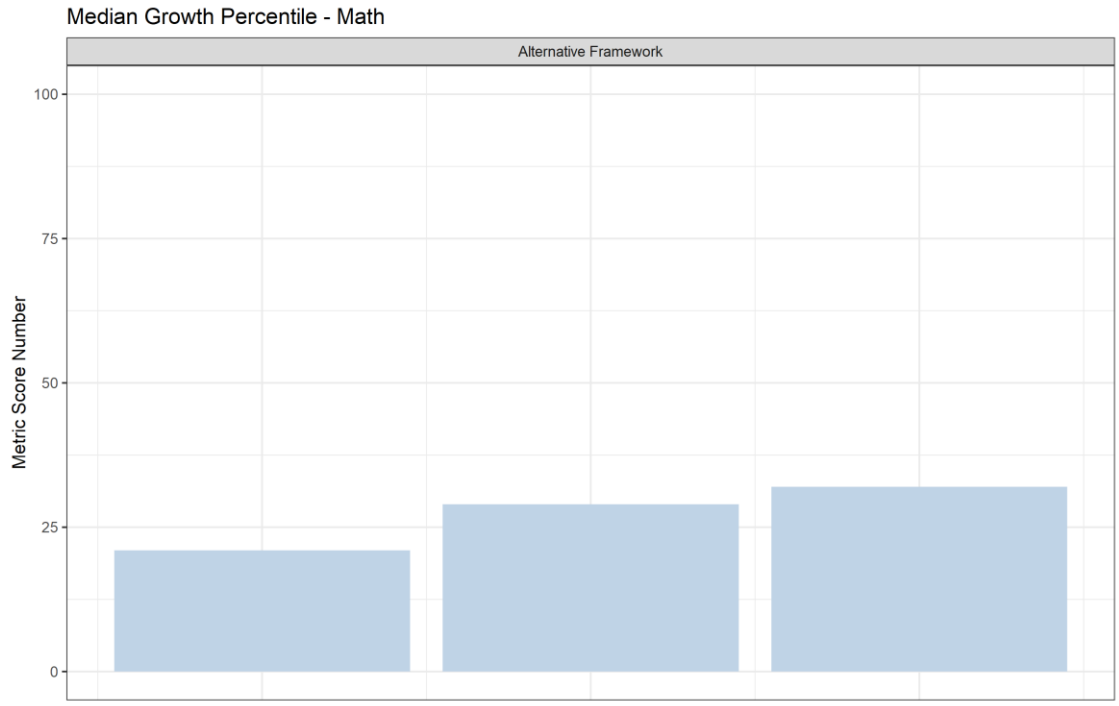


Figure 80

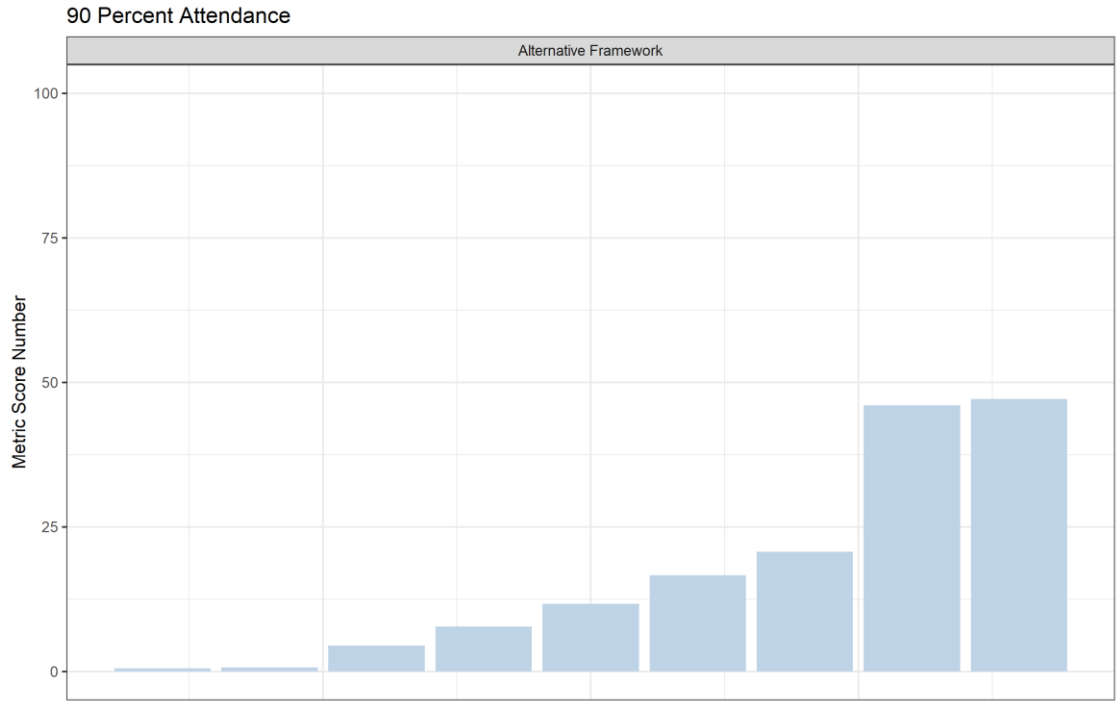


Figure 81

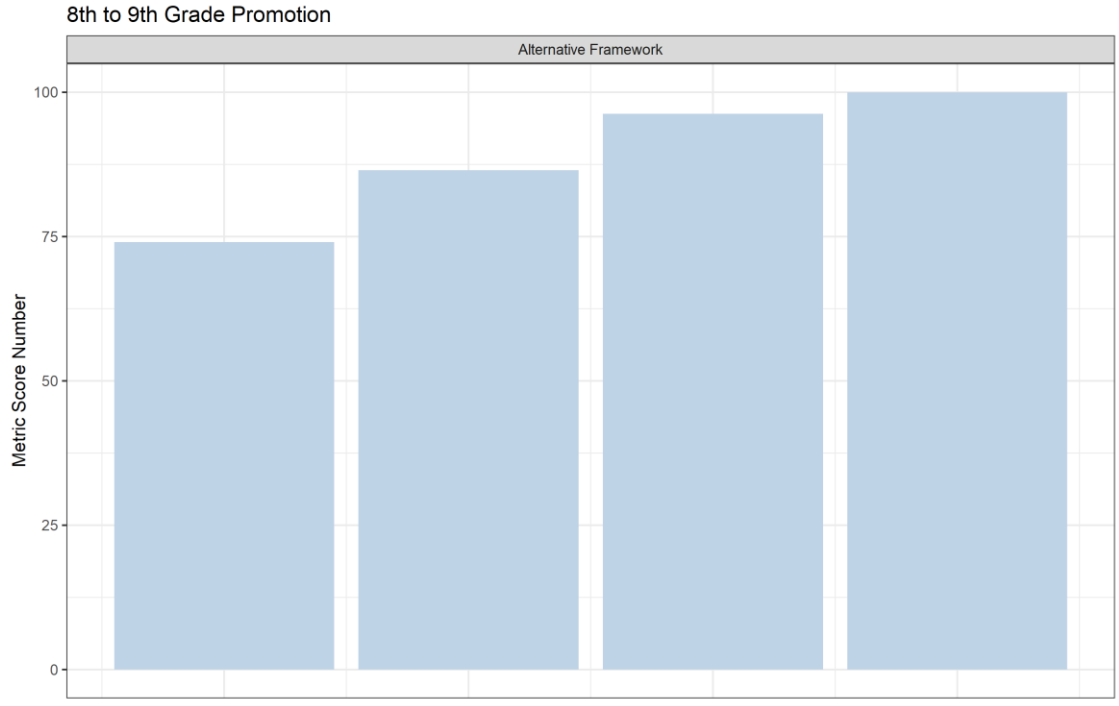


Figure 82

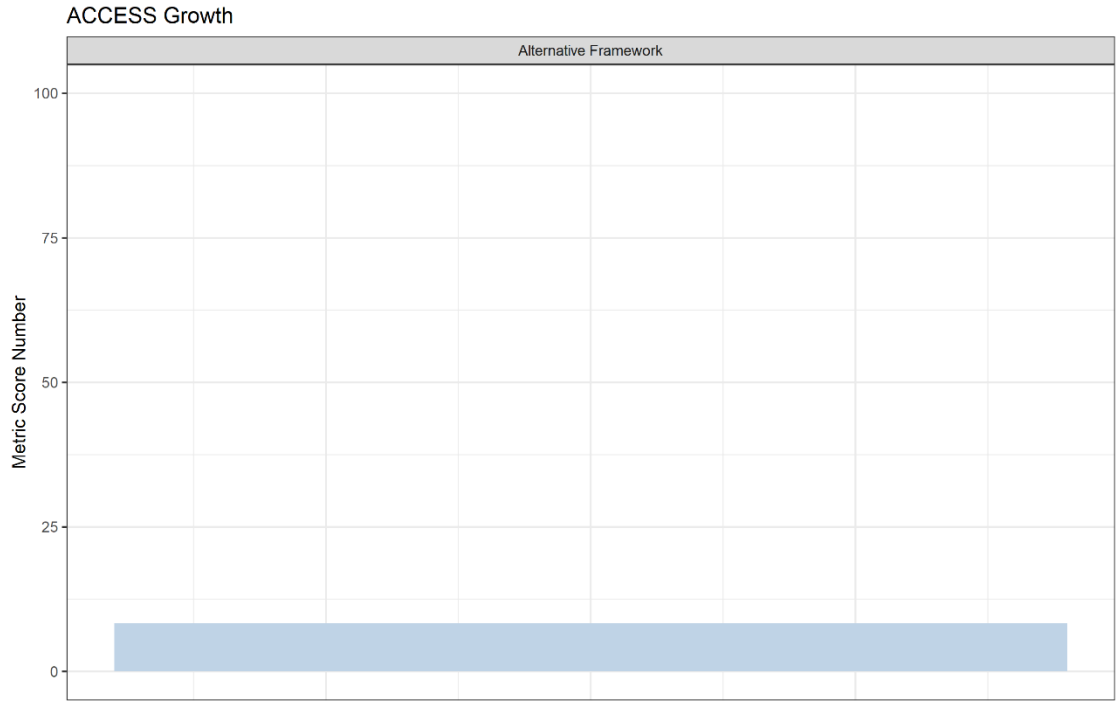


Figure 83

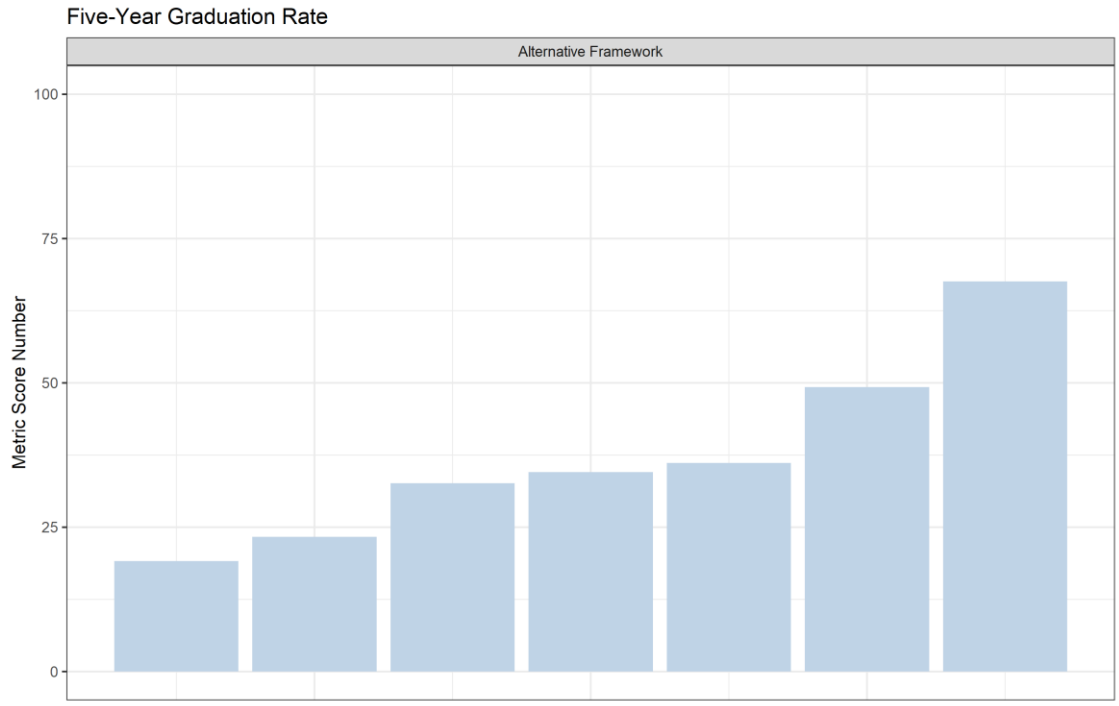


Figure 84

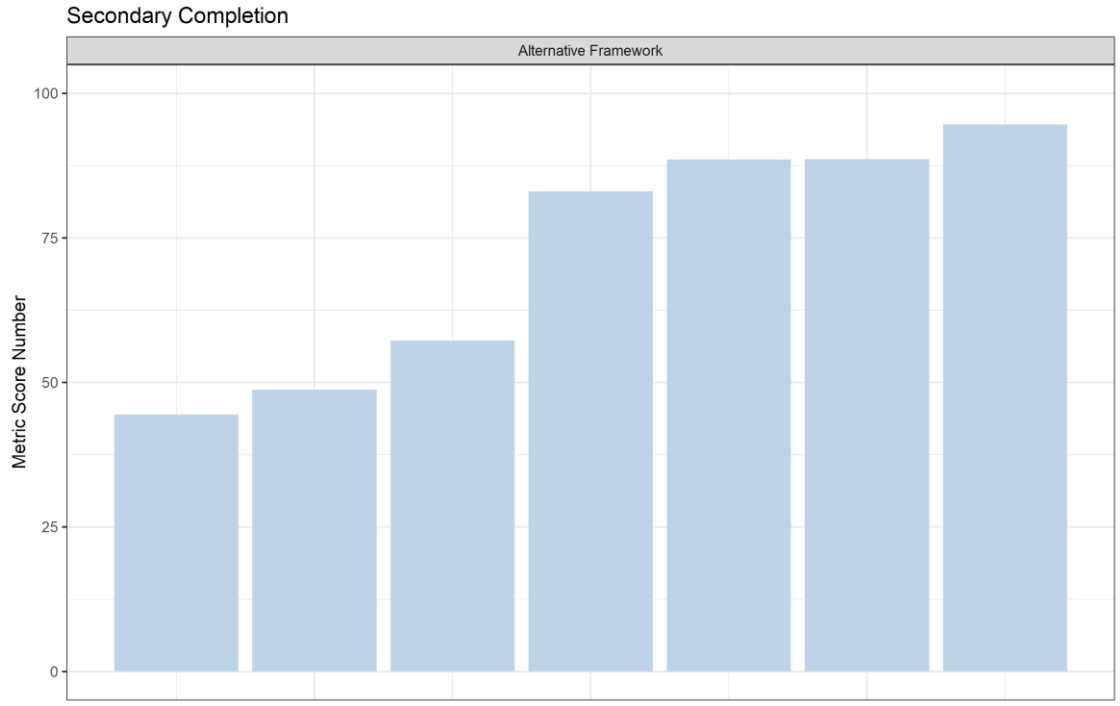


Figure 85

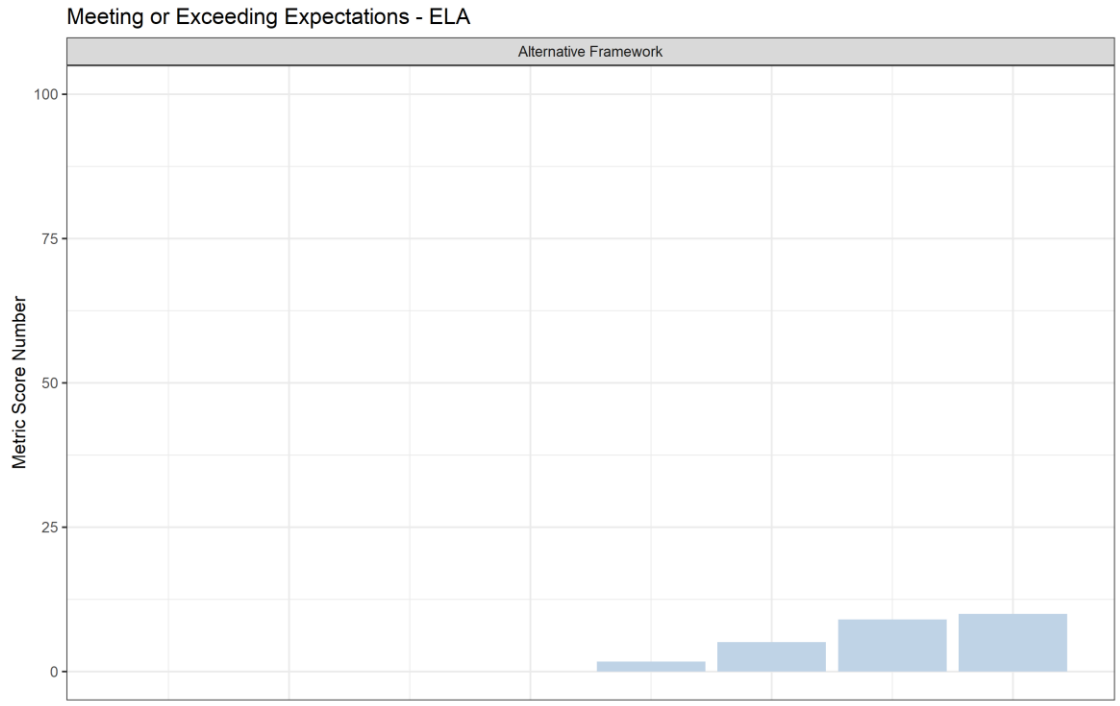
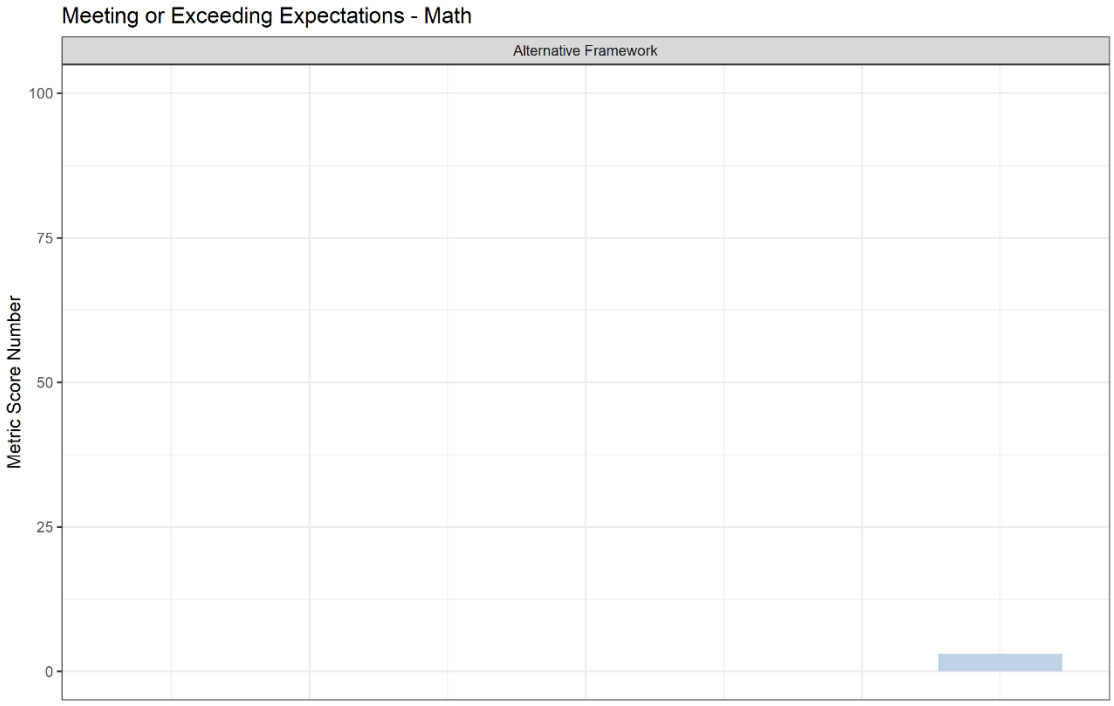


Figure 86


Meeting or Exceeding Expectations - Math
Alternative Framework
Metric Score Number
100
75
50
25
0

Appendix C - Relationships

Metric Correlations: Elementary, Middle, and High School Frameworks

Pearson correlation coefficients were used to examine the strength of the linear relationship between STAR metrics. Figure 88 shows the correlation matrices for all STAR Framework metrics for the Elementary, Middle and High School Frameworks, respectively. Darker colors represent higher correlations.

Correlations matrices offer an initial glance at the relationship between two variables. In this section, the correlation matrices indicate the relationship between two STAR metrics. As the number (coefficient) between two metrics approaches 1, the stronger the positive relationship is between those metrics. As the coefficient between two metrics approach -1, the stronger the negative relationship is between those metrics. If the coefficient between two metrics is 0, there is no relationship between those metrics. Correlation coefficients are an initial indicator of a positive or negative relationship, but should be viewed with caution as they do not assert any significance to the relationship between two metrics. Two metrics can be very highly correlated, but still measure something different. For example, examination of the correlation coefficients reveals strong correlations between ELA and math performance metrics within the achievement domain, though they measure different constructs.

Looking across STAR domains, weak to moderate relationships between the academic achievement and growth metrics are observed. Only a moderate correlation is observed between academic growth metrics, Median Growth Percentile and Growth to Proficiency. At the same time, the Growth to Proficiency and Median Growth Percentile metrics for the same subject (ELA or Math) are highly correlated.

With respect to attendance metrics, 90% Attendance is highly correlated with In-Seat Attendance across all three frameworks. This finding suggests that schools with high rates of In-Seat Attendance also tend to perform well on the 90% Attendance metric. Attendance Growth is weakly correlated with other measures of attendance in the Elementary School framework, while it is highly correlated with other measures of attendance in the Middle and High School frameworks.

Figure 87

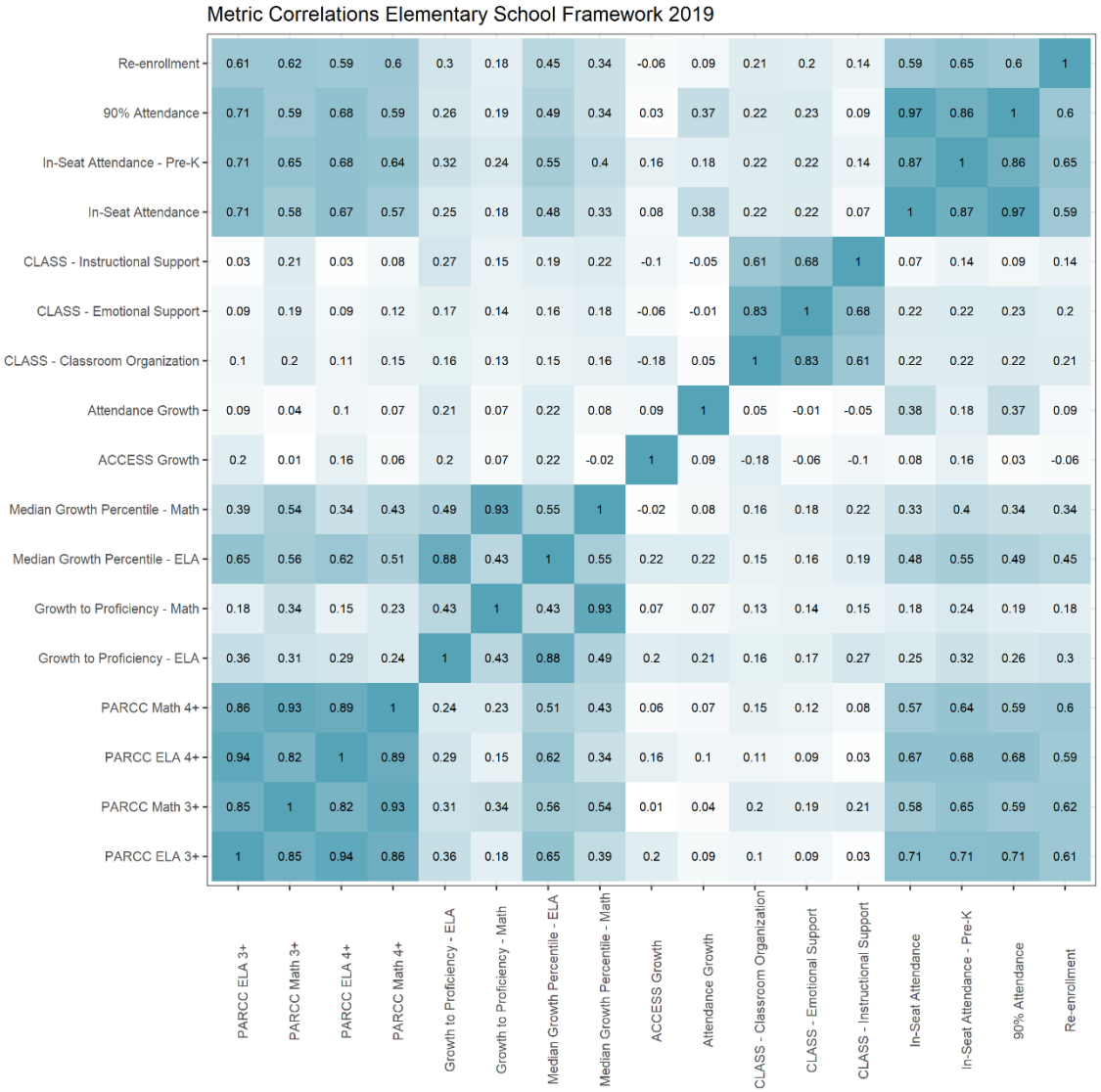

Metric Correlations Elementary School Framework 2019
Re-enrollment 0.61 0.62 0.59 0.6 0.3 0.18 0.45 0.34 -0.06 0.09 0.21 0.2 0.14 0.59 0.65 0.6 1
90% Attendance 0.71 0.59 0.68 0.59 0.26 0.19 0.49 0.34 0.03 0.37 0.22 0.23 0.09 0.97 0.86 1 0.6
In-Seat Attendance - Pre-K 0.71 0.65 0.68 0.64 0.32 0.24 0.55 0.4 0.16 0.18 0.22 0.22 0.14 0.87 1 0.86 0.65
In-Seat Attendance 0.71 0.58 0.67 0.57 0.25 0.18 0.48 0.33 0.08 0.38 0.22 0.22 0.07 1 0.87 0.97 0.59
CLASS - Instructional Support 0.03 0.21 0.03 0.08 0.27 0.15 0.19 0.22 -0.1 -0.05 0.61 0.68 1 0.07 0.14 0.09 0.14
CLASS - Emotional Support 0.09 0.19 0.09 0.12 0.17 0.14 0.16 0.18 -0.06 -0.01 0.83 1 0.68 0.22 0.22 0.23 0.2
CLASS - Classroom Organization 0.1 0.2 0.11 0.15 0.16 0.13 0.15 0.16 -0.18 0.05 1 0.83 0.61 0.22 0.22 0.22 0.21
Attendance Growth 0.09 0.04 0.1 0.07 0.21 0.07 0.22 0.08 0.09 1 0.05 -0.01 -0.05 0.38 0.18 0.37 0.09
ACCESS Growth 0.2 0.01 0.16 0.06 0.2 0.07 0.22 -0.02 1 0.09 -0.18 -0.06 -0.1 0.08 0.16 0.03 -0.06
Median Growth Percentile - Math 0.39 0.54 0.34 0.43 0.49 0.93 0.55 1 -0.02 0.08 0.16 0.18 0.22 0.33 0.4 0.34 0.34
Median Growth Percentile - ELA 0.65 0.56 0.62 0.51 0.88 0.43 1 0.55 0.22 0.22 0.15 0.16 0.19 0.48 0.55 0.49 0.45
Growth to Proficiency - Math 0.18 0.34 0.15 0.23 0.43 1 0.43 0.93 0.07 0.07 0.13 0.14 0.15 0.18 0.24 0.19 0.18
Growth to Proficiency - ELA 0.36 0.31 0.29 0.24 1 0.43 0.88 0.49 0.2 0.21 0.16 0.17 0.27 0.25 0.32 0.26 0.3
PARCC Math 4+ 0.86 0.93 0.89 1 0.24 0.23 0.51 0.43 0.06 0.07 0.15 0.12 0.08 0.57 0.64 0.59 0.6
PARCC ELA 4+ 0.94 0.82 1 0.89 0.29 0.15 0.62 0.34 0.16 0.1 0.11 0.09 0.03 0.67 0.68 0.68 0.59
PARCC Math 3+ 0.85 1 0.82 0.93 0.31 0.34 0.56 0.54 0.01 0.04 0.2 0.19 0.21 0.58 0.65 0.59 0.62
PARCC ELA 3+ 1 0.85 0.94 0.86 0.36 0.18 0.65 0.39 0.2 0.09 0.1 0.09 0.03 0.71 0.71 0.71 0.61
PARCC ELA 3+
PARCC Math 3+
PARCC ELA 4+
PARCC Math 4+
Growth to Proficiency - ELA
Growth to Proficiency - Math
Median Growth Percentile - ELA
Median Growth Percentile - Math
ACCESS Growth
Attendance Growth
CLASS - Classroom Organization
CLASS - Emotional Support
CLASS - Instructional Support
In-Seat Attendance
In-Seat Attendance - Pre-K
90% Attendance
Re-enrollment

Figure 88

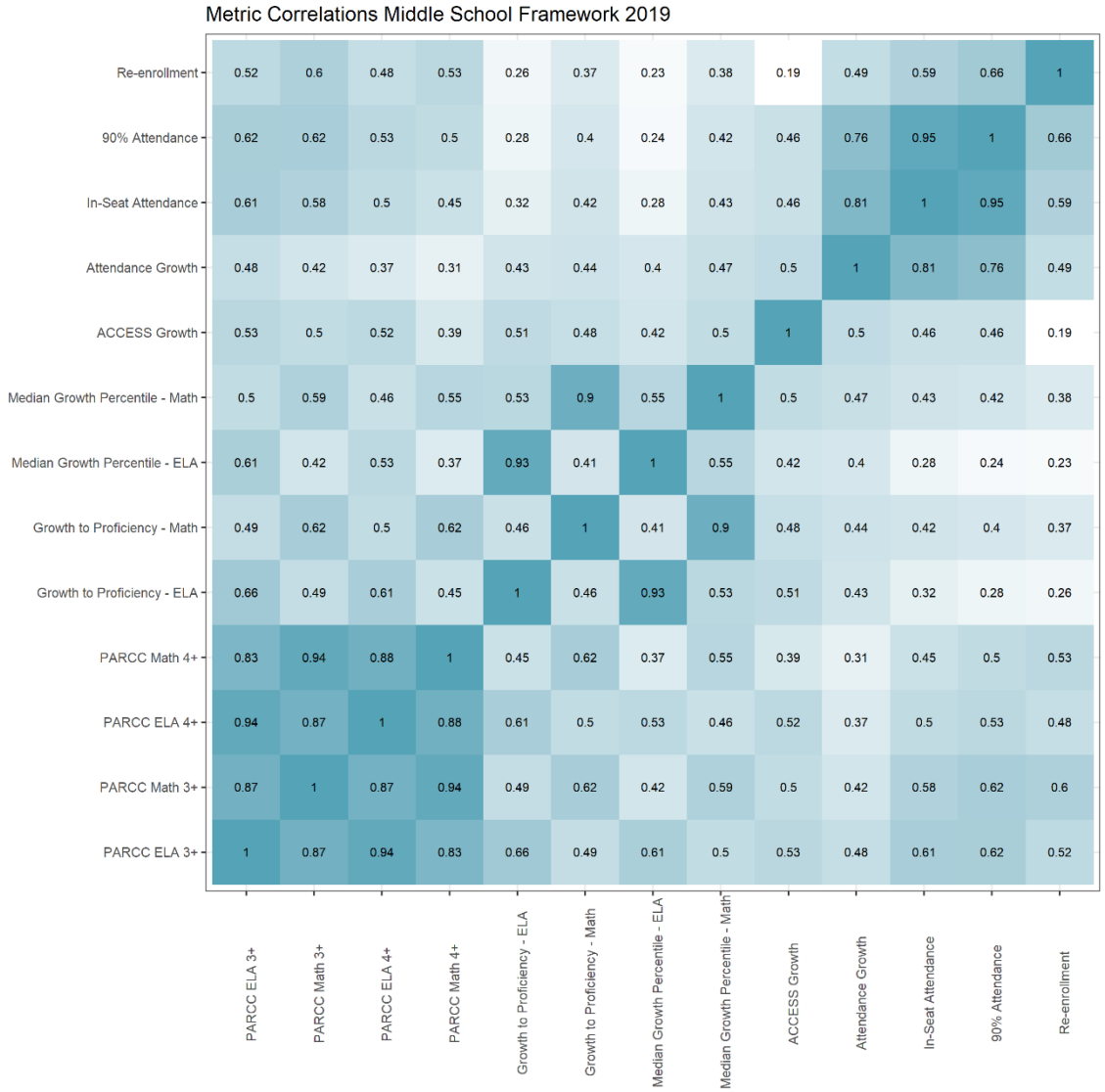
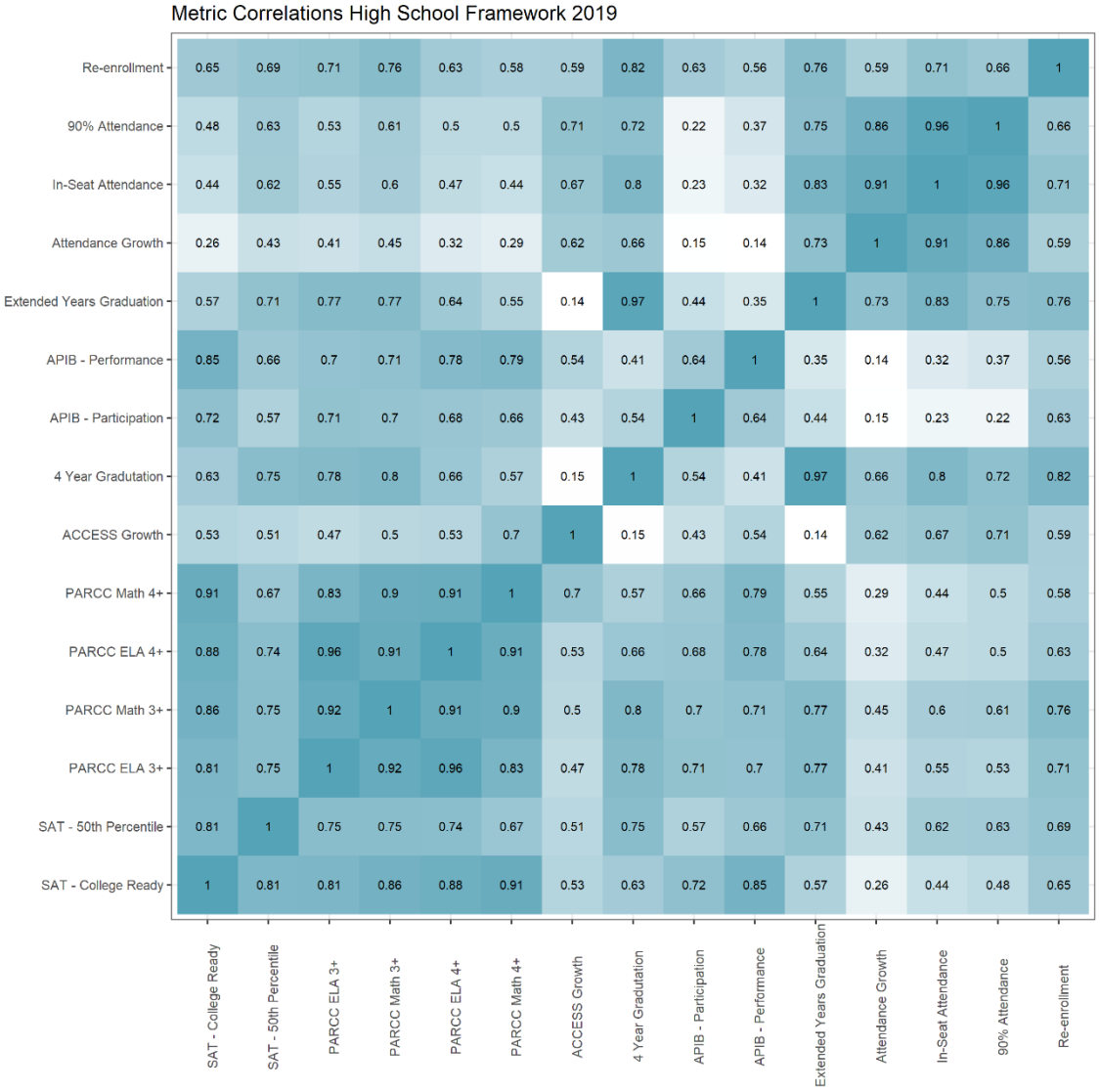

Metric Correlations Middle School Framework 2019
Re-enrollment 0.52 0.6 0.48 0.53 0.26 0.37 0.23 0.38 0.19 0.49 0.59 0.66 1
90% Attendance 0.62 0.62 0.53 0.5 0.28 0.4 0.24 0.42 0.46 0.76 0.95 1 0.66
In-Seat Attendance 0.61 0.58 0.5 0.45 0.32 0.42 0.28 0.43 0.46 0.81 1 0.95 0.59
Attendance Growth 0.48 0.42 0.37 0.31 0.43 0.44 0.4 0.47 0.5 1 0.81 0.76 0.49
ACCESS Growth 0.53 0.5 0.52 0.39 0.51 0.48 0.42 0.5 1 0.5 0.46 0.46 0.19
Median Growth Percentile - Math 0.5 0.59 0.46 0.55 0.53 0.9 0.55 1 0.5 0.47 0.43 0.42 0.38
Median Growth Percentile - ELA 0.61 0.42 0.53 0.37 0.93 0.41 1 0.55 0.42 0.4 0.28 0.24 0.23
Growth to Proficiency - Math 0.49 0.62 0.5 0.62 0.46 1 0.41 0.9 0.48 0.44 0.42 0.4 0.37
Growth to Proficiency - ELA 0.66 0.49 0.61 0.45 1 0.46 0.93 0.53 0.51 0.43 0.32 0.28 0.26
PARCC Math 4+ 0.83 0.94 0.88 1 0.45 0.62 0.37 0.55 0.39 0.31 0.45 0.5 0.53
PARCC ELA 4+ 0.94 0.87 1 0.88 0.61 0.5 0.53 0.46 0.52 0.37 0.5 0.53 0.48
PARCC Math 3+ 0.87 1 0.87 0.94 0.49 0.62 0.42 0.59 0.5 0.42 0.58 0.62 0.6
PARCC ELA 3+ 1 0.87 0.94 0.83 0.66 0.49 0.61 0.5 0.53 0.48 0.61 0.62 0.52
PARCC ELA 3+
PARCC Math 3+
PARCC ELA 4+
PARCC Math 4+
Growth to Proficiency - ELA
Growth to Proficiency - Math
Median Growth Percentile - ELA
Median Growth Percentile - Math
ACCESS Growth
Attendance Growth
In-Seat Attendance
90% Attendance
Re-enrollment

Figure 89


Metric Correlations High School Framework 2019
Re-enrollment 0.65 0.69 0.71 0.76 0.63 0.58 0.59 0.82 0.63 0.56 0.76 0.59 0.71 0.66 1
90% Attendance 0.48 0.63 0.53 0.61 0.5 0.5 0.71 0.72 0.22 0.37 0.75 0.86 0.96 1 0.66
In-Seat Attendance 0.44 0.62 0.55 0.6 0.47 0.44 0.67 0.8 0.23 0.32 0.83 0.91 1 0.96 0.71
Attendance Growth 0.26 0.43 0.41 0.45 0.32 0.29 0.62 0.66 0.15 0.14 0.73 1 0.91 0.86 0.59
Extended Years Graduation 0.57 0.71 0.77 0.77 0.64 0.55 0.14 0.97 0.44 0.35 1 0.73 0.83 0.75 0.76
APIB - Performance 0.85 0.66 0.7 0.71 0.78 0.79 0.54 0.41 0.64 1 0.35 0.14 0.32 0.37 0.56
APIB - Participation 0.72 0.57 0.71 0.7 0.68 0.66 0.43 0.54 1 0.64 0.44 0.15 0.23 0.22 0.63
4 Year Gradutation 0.63 0.75 0.78 0.8 0.66 0.57 0.15 1 0.54 0.41 0.97 0.66 0.8 0.72 0.82
ACCESS Growth 0.53 0.51 0.47 0.5 0.53 0.7 1 0.15 0.43 0.54 0.14 0.62 0.67 0.71 0.59
PARCC Math 4+ 0.91 0.67 0.83 0.9 0.91 1 0.7 0.57 0.66 0.79 0.55 0.29 0.44 0.5 0.58
PARCC ELA 4+ 0.88 0.74 0.96 0.91 1 0.91 0.53 0.66 0.68 0.78 0.64 0.32 0.47 0.5 0.63
PARCC Math 3+ 0.86 0.75 0.92 1 0.91 0.9 0.5 0.8 0.7 0.71 0.77 0.45 0.6 0.61 0.76
PARCC ELA 3+ 0.81 0.75 1 0.92 0.96 0.83 0.47 0.78 0.71 0.7 0.77 0.41 0.55 0.53 0.71
SAT - 50th Percentile 0.81 1 0.75 0.75 0.74 0.67 0.51 0.75 0.57 0.66 0.71 0.43 0.62 0.63 0.69
SAT - College Ready 1 0.81 0.81 0.86 0.88 0.91 0.53 0.63 0.72 0.85 0.57 0.26 0.44 0.48 0.65
SAT - College Ready
SAT - 50th Percentile
PARCC ELA 3+
PARCC Math 3+
PARCC ELA 4+
PARCC Math 4+
ACCESS Growth
4 Year Gradutation
APIB - Participation
APIB - Performance
Extended Years Graduation
Attendance Growth
In-Seat Attendance
90% Attendance
Re-enrollment

Regression Analyses Exploring Student Groups and STAR Ratings

The following series of regression analyses examine the relationship between schools' student composition (the percentage of students in each student group) and schools' STAR scores. While a correlation analysis examines the association between two variables, a regression analysis allows for the examination of how one or more variables (e.g., metrics or student groups) collectively explain differences in an outcome variable (e.g., STAR score or framework score).

One statistic that is a focus throughout these analyses is the adjusted-R^2 (R^2). The R^2 indicates how much variance is explained by the variables in a regression model. With this statistic we can observe how much variance is explained by student groups and metrics alone or together. There are several R^2 statistics listed in the following analysis, but caution should be used in judging R^2 statistics against one another; the R^2 can only explain how much variance is in each single model, it cannot ascertain between variables in a model which is the driving factor. Nor should the R^2 be viewed as solely causal; having a high R^2 in a model does not necessarily mean those variables cause an outcome they may only be associated with a particular outcome and can be spuriously correlated with other factors.

Relationships between Student Groups, STAR Metrics, and STAR Scores

Given the deliberate focus, weight, and historical performance gaps between student groups, it is important to further explore the relationship between the percentage of schools' population of students in these identified groups and schools' STAR scores. The following analyses examine the association between English learners, students with disabilities, and the factors that identify students as at-risk and schools' STAR scores and school framework scores. In DC, at-risk is defined as a student who possesses one of the following characteristics at any point during the given school year: Temporary Assistance for Needy Families (TANF) enrollment, Supplemental Nutrition Assistance Program (SNAP) enrollment, identification as homeless by the student's school or other community partners, under the care of the Child and Family Services Agency (CFSA, also known as foster care), and/or over age (high school only: a high school student is over age if he or she is at least one year older than the expected age for their grade).

These student population characteristics explained approximately 51 percent (R^2=.507) of the differences in schools' STAR scores in the citywide model.

Table 1: OLS Regression Analysis for Student Group Variables (including components of at-risk) on STAR Score

	(1)	
	ß	SE
English Learners	-0.0585	(0.0724)
Students with Disabilities	-0.621***	(0.166)
CFSA	-1.864	(1.760)
Homeless	0.237	(0.238)
TANF/SNAP	-0.588***	(0.0719)
Constant	88.23***	(3.009)
Observations	206	
Adjusted R^2	0.507	

Linear regression of student group characteristics on school STAR score controlling for percent of population of student groups

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

At the framework level, these student population characteristics accounted for the most differences in High School Framework scores (87 percent, R^2=.866), followed by Elementary School Framework scores (47%, R^2=.474), and then Middle School framework scores (36 percent, R^2=.358). Of the at-risk components, the percentage of students that receive TANF/SNAP benefits was the only statistically significant characteristic across all frameworks.

Table 2: OLS Regression Analysis for Student Group Variables (including components of at-risk) on Framework Score

	Elementary		Middle		High	
	ß	SE	ß	SE	ß	SE
English Learners	0.102	(0.0569)	-0.210	(0.190)	-0.104	(0.242)
Students with Disabilities	-0.500	(0.259)	-0.407	(0.385)	-0.210	(0.336)
CFSA	1.152	(2.275)	1.295	(2.762)	-4.819*	(2.228)
Homeless	-0.0713	(0.280)	0.228	(0.675)	1.396	(0.979)
TANF/SNAP	-0.544***	(0.0914)	-0.787***	(0.158)	-0.658**	(0.199)
Overage					-1.547***	(0.407)
Constant	80.93***	(4.213)	96.81***	(8.072)	111.2***	(3.139)
Observations	138		73		34	
Adjusted R^2	0.474		0.358		0.866	

Linear regression of percent of population on school framework score controlling for the percent of population of other student groups

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple regression analysis was used to examine the extent to which schools' framework scores and STAR scores are related to the percentage of students who are English learners, students with disabilities, students who are at-risk, and members of each race/ethnicity group at the school. This analysis also included three interaction terms (English learners x students with disabilities, students with disabilities x student who are at-risk, and student who are at-risk x English learners) to assess whether the relationship between each student characteristic and STAR scores was moderated by the presence of another. For example, using interaction terms enables us to examine the extent to which the relationship between the percentage of English learners and a school's STAR score is impacted by its percentage of students with disabilities or students who are at-risk.

Table 3: OLS Regression Analysis of Student Groups on School STAR Score

	Student Groups		Additional Student Groups	
	ß		ß	
English Learners	-0.0805	(0.170)	-0.0994	(0.263)
Students with Disabilities	-0.492**	(0.175)	-0.927*	(0.451)
At-Risk	-0.657***	(0.0893)	-0.717***	(0.147)
American Indian/Alaskan Native	-5.495	(9.696)	-6.222	(9.865)
Asian	-6.011	(9.322)	-6.540	(9.398)
Black/African-American	-6.518	(9.262)	-6.799	(9.337)
Hispanic/Latino of any race	-6.501	(9.258)	-6.751	(9.334)
Two or more races	-7.684	(9.265)	-7.962	(9.336)
Native Hawaiian/Other Pacific Islander	-12.57	(12.77)	-12.33	(13.03)
White	-6.487	(9.266)	-6.777	(9.345)
English Learner*Student with Disability			0.0146	(0.0134)
Student with Disability*At-Risk			0.00558	(0.00664)
At-Risk*English Learner			-0.00587	(0.00405)
Constant	746.0	(926.2)	779.5	(934.1)
Observations	206		206	
Adjusted R^2	0.540		0.538	

Linear regression of percent of population on school STAR score controlling for the percent of population of student groups with interactions in the second model.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: OLS Regression Analysis of Student Groups on School STAR Score by Framework

	Elementary		Middle		High	
	ß	SE	ß	SE	ß	SE
English Learners	-0.255	(0.181)	-0.767	(0.457)	-0.663	(0.385)
Students with Disabilities	-0.555*	(0.242)	-0.105	(0.413)	-0.764	(0.544)
At-Risk	-0.426***	(0.0995)	-0.812***	(0.190)	-1.524***	(0.343)
Asian	-5.665	(9.913)	14.35	(27.17)	135.1*	(51.22)
Black/African-American	-6.095	(9.840)	11.85	(26.53)	134.6*	(50.39)
Hispanic/Latino of any race	-5.719	(9.846)	12.11	(26.51)	134.7*	(50.17)
Two or more races	-6.798	(9.814)	10.27	(26.34)	122.7*	(49.35)
Native Hawaiian/ Other Pacific Islander	-20.02	(12.33)	9.402	(28.09)	155.5*	(62.37)
White	-5.877	(9.852)	11.59	(26.50)	134.7*	(50.24)
American Indian/ Alaskan Native	-4.351	(10.21)	4.825	(26.23)	139.4**	(48.46)
Constant	686.2	(983.8)	-1085.1	(2652.5)	-13300.0*	(5030.5)
Observations	138		73		34	
Adjusted R^2	0.509		0.346		0.861	

Linear regression of percent of population on school framework score controlling for the percent of population of other student groups with interactions.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Relationship between School Student Composition and STAR Score

An additional set of regression analyses explores the relationship between the percentage of students who are at-risk and schools' metric scores for the elementary, middle, and high school frameworks. Tables C.5 – C.7 show the adjusted R^2 value for relationship between a metric and the percentage of students at a school who are at-risk, English learners, and students with disabilities. The R^2 value shows the percent of the variation in the metric score that can be explained by the differences in the percentage of students at each school who belong to a particular student group.

The relationship is consistently strong between at-risk percentage and achievement metrics. This aligns with the literature on how at-risk status relates to student achievement. The academic growth metrics, on the other hand, are relatively less related to at-risk percentage, as are attendance growth and ACCESS growth. This underscores the importance of including multiple growth metrics in the STAR Framework and to place higher weight on academic growth compared to academic achievement in the elementary and middle school frameworks. The relationships between the percentage of students at a school who are English learners or students with disabilities are consistently weak across all metrics.

Table 5: Linear Regression Analysis of Percentage of students who are At-risk on Metric Score, by Framework

Metric	Elementary School	Middle School	High School
CLASS - Pre-K Classroom Organization	0.033		
CLASS - Pre-K Emotional Support	0.039		
CLASS - Pre-K Instructional Support	-0.006		
Pre-K In-Seat Attendance	0.557		
Growth to Proficiency – ELA	0.025	0.073	
Growth to Proficiency – Math	0.014	0.090	
Median Growth Percentile ELA	0.219	0.025	
Median Growth Percentile Math	0.101	0.064	
90% Attendance	0.653	0.339	0.242
ACCESS Growth	-0.016	0.087	0.258
Attendance Growth	0.006	0.084	0.098
In-Seat Attendance	0.595	0.290	0.239
PARCC 3+/MSAA3+ ELA	0.656	0.547	0.818
PARCC 3+/MSAA3+ Math	0.477	0.545	0.773
PARCC 4+/MSAA3+ ELA	0.641	0.605	0.794
PARCC 4+/MSAA3+ Math	0.553	0.527	0.679
Re-enrollment	0.295	0.271	0.561
AP/IB Participation			0.579
AP/IB Performance			0.721
Extended Years Graduation Rate			0.418
Four-Year Graduation Rate			0.510
SAT College and Career Ready Benchmark			0.824
SAT DC Percentile			0.743

Table 6: Linear Regression Analysis of Percentage of students who are English Learners on Metric Score, by Framework

Metric	Elementary School	Middle School	High School
CLASS - Pre-K Classroom Organization	0.032		
CLASS - Pre-K Emotional Support	0.039		
CLASS - Pre-K Instructional Support	-0.003		
Pre-K In-Seat Attendance	0.053		
Growth to Proficiency – ELA	0.021	0.004	
Growth to Proficiency - Math	0.069	-0.014	
Median Growth Percentile ELA	0.038	0.005	
Median Growth Percentile Math	0.080	-0.009	
90% Attendance	0.142	0.004	0.061
ACCESS Growth	-0.005	0.219	-0.077
Attendance Growth	-0.006	0.001	0.017
In-Seat Attendance	0.139	0.005	0.042
PARCC 3+/MSAA3+ ELA	0.042	-0.012	0.036
PARCC 3+/MSAA3+ Math	0.056	-0.014	0.034
PARCC 4+/MSAA3+ ELA	0.016	-0.014	0.043
PARCC 4+/MSAA3+ Math	0.023	-0.014	0.019
Re-enrollment	0.090	-0.014	-0.030
AP/IB Participation			-0.025
AP/IB Performance			-0.023
Extended Years Graduation Rate			0.159
Four-Year Graduation Rate			0.121
SAT College and Career Ready Benchmark			0.019
SAT DC Percentile			0.052

Table 7: Linear Regression Analysis of Percentage of Students with Disabilities on Metric Score, by Framework

Metric	Elementary School	Middle School	High School
CLASS - Pre-K Classroom Organization	0.023		
CLASS - Pre-K Emotional Support	0.019		
CLASS - Pre-K Instructional Support	0.044		
Pre-K In-Seat Attendance	0.015		
Growth to Proficiency - ELA	0.002	0.015	
Growth to Proficiency - Math	-0.002	0.016	
Median Growth Percentile ELA	0.059	0.013	
Median Growth Percentile Math	0.025	0.023	
90% Attendance	0.050	0.110	0.154
ACCESS Growth	-0.015	-0.036	0.170
Attendance Growth	0.007	-0.005	0.087
In-Seat Attendance	0.046	0.116	0.178
PARCC 3+/MSAA3+ ELA	0.104	0.213	0.601
PARCC 3+/MSAA3+ Math	0.146	0.178	0.585
PARCC 4+/MSAA3+ ELA	0.127	0.206	0.613
PARCC 4+/MSAA3+ Math	0.128	0.179	0.549
Re-enrollment	-0.005	0.008	0.434
AP/IB Participation			0.626
AP/IB Performance			0.459
Extended Years Graduation Rate			0.307
Four-Year Graduation Rate			0.425
SAT College and Career Ready Benchmark			0.635
SAT DC Percentile			0.536

Appendix D - Exploration of Achievement and Academic Growth

STAR Framework under Different Achievement and Growth Methodologies

The following section investigates the relative influence of achievement and growth metrics on the STAR Framework by examining actual versus hypothetical STAR scores and rating distributions under different framework scenarios that include or exclude achievement and growth metrics from the STAR Framework. Through these analyses OSSE does not suggest removing any of the metrics or domains from the STAR Framework; instead, these analyses serve as a way to view the importance of each metric and domain in the STAR Framework.

In the figures below, each point represents a school and the color of the point demonstrates a change in the STAR rating from a schools' actual STAR score compared to a hypothetical score calculated under each scenario; the highlighted boxes in grey show the region where STAR ratings would stay the same under the actual versus hypothetical scenario. Each figure also includes the line of best fit with the slope noted at the bottom; this linear coefficient indicates how much it is expected the actual STAR score would change for a 1 unit increase in the hypothetical score.

Figure 91 compares schools' actual STAR scores against hypothetical scores resulting from an accountability framework which only included the state assessment achievement metrics and did not include growth metrics. The plotted line shows the linear relationship between scores generated with only achievement metrics and actual STAR scores. The y-intercept of 21 can be read as the current STAR score for schools that would receive a hypothetical STAR score of zero if only state assessment achievement metrics were included. The slope of 0.656 means that for every one-point increase in the achievement-only hypothetical score, the actual STAR score is expected to increase by 0.656 points. The plotted line illustrates that lower-performing schools tend to achieve higher STAR scores under the actual STAR Framework (when all accountability metrics are included). Results from this analysis reveal that if the STAR Framework only included state assessment achievement metrics, 52 percent of schools' STAR ratings would change, with the STAR ratings for many two- and three-star schools decreasing, and the ratings for four-star schools both decreasing and increasing.

Specifically, at the lower end of the hypothetical score scale, most schools fall above the highlighted boxes which shows that among schools that would have earned one-, two-, and three-star ratings based solely on their state assessment achievement, the presence of other metrics in the STAR Framework resulted in many schools receiving a higher STAR rating. Collectively these results reveal that schools must perform well on other metrics within the STAR Framework to earn higher STAR ratings; high performance on achievement metrics alone does not result in four- or five-star ratings under the actual STAR Framework.

Figure 90

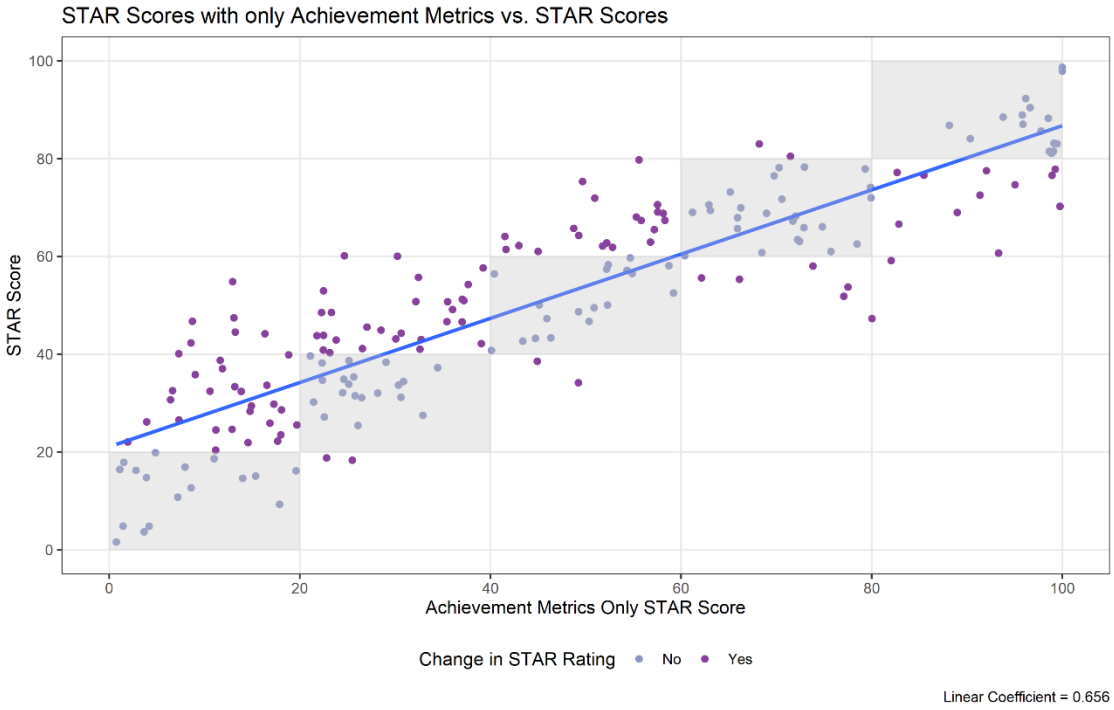

STAR Scores with only Achievement Metrics vs. STAR Scores
STAR Score
100
80
60
40
20
0
0
20
40
60
80
100
Achievement Metrics Only STAR Score
Change in STAR Rating
No
Yes
Linear Coefficient = 0.656

Figure 92 examines a hypothetical scenario where schools' STAR scores are calculated without the inclusion of any state assessment achievement metrics, an option not permitted by federal law. Purely for statistical analysis, we reviewed the results which showed that the state assessment achievement metrics were excluded from the STAR Framework, the STAR Rating for 73 percent of schools would not change; for those schools that would have a change, some schools would have received a better rating in the hypothetical accountability system where state assessment achievement was not included, but others would have received a lower rating.

Figure 91

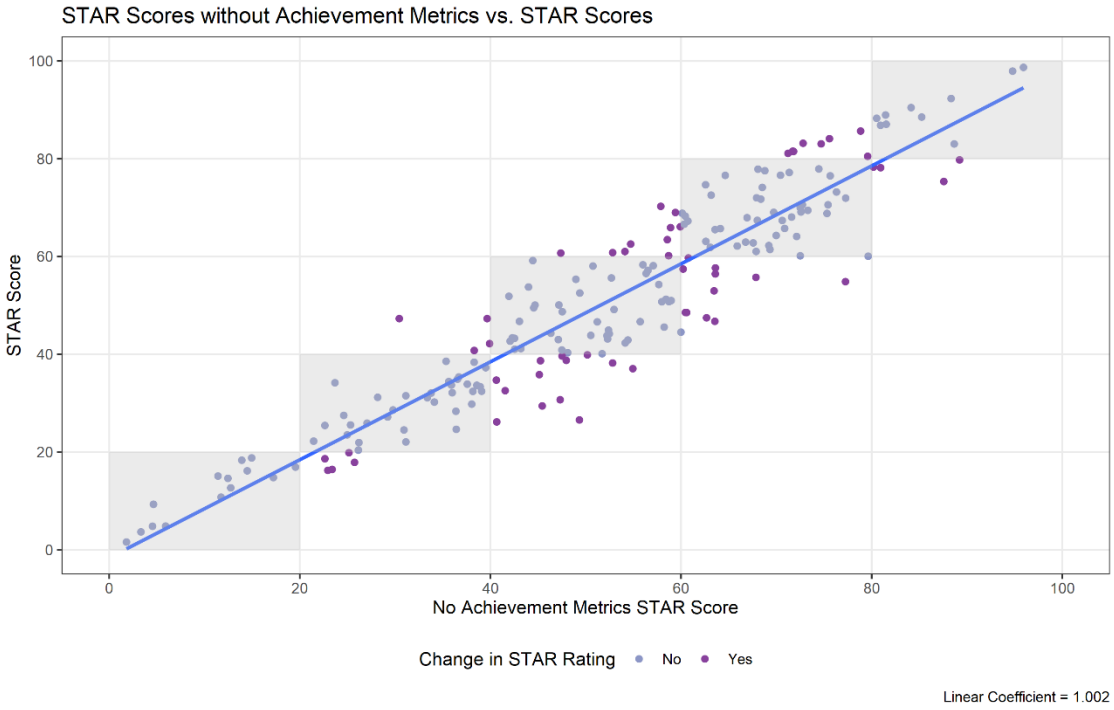


Figure 93 examines the hypothetical scenario where the STAR Framework includes only growth metrics (Median Growth Percentile, Growth to Proficiency, ACCESS Growth, and Attendance Growth). This analysis shows considerable variability and that the STAR Ratings would change for 60 percent of all schools under this condition.

All analyses featuring the inclusion or absence of growth metrics only includes schools which had academic growth metrics in this year's STAR Score. As a result, all high schools and elementary schools that only go up to grade 3 are excluded.

Figure 92

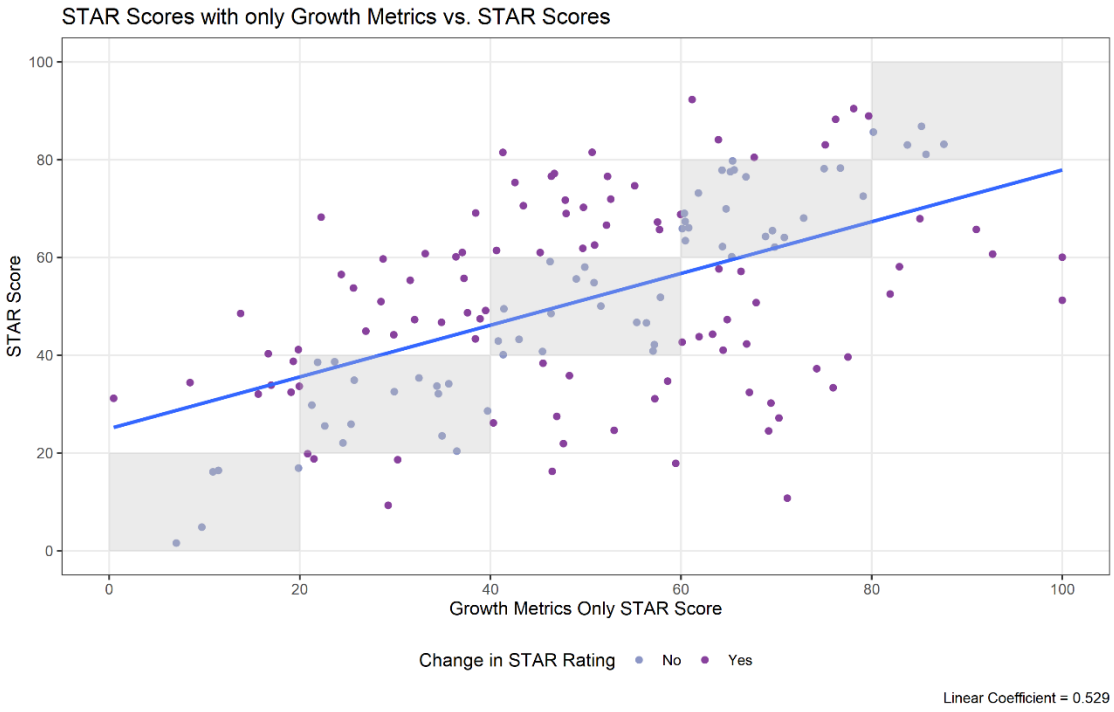
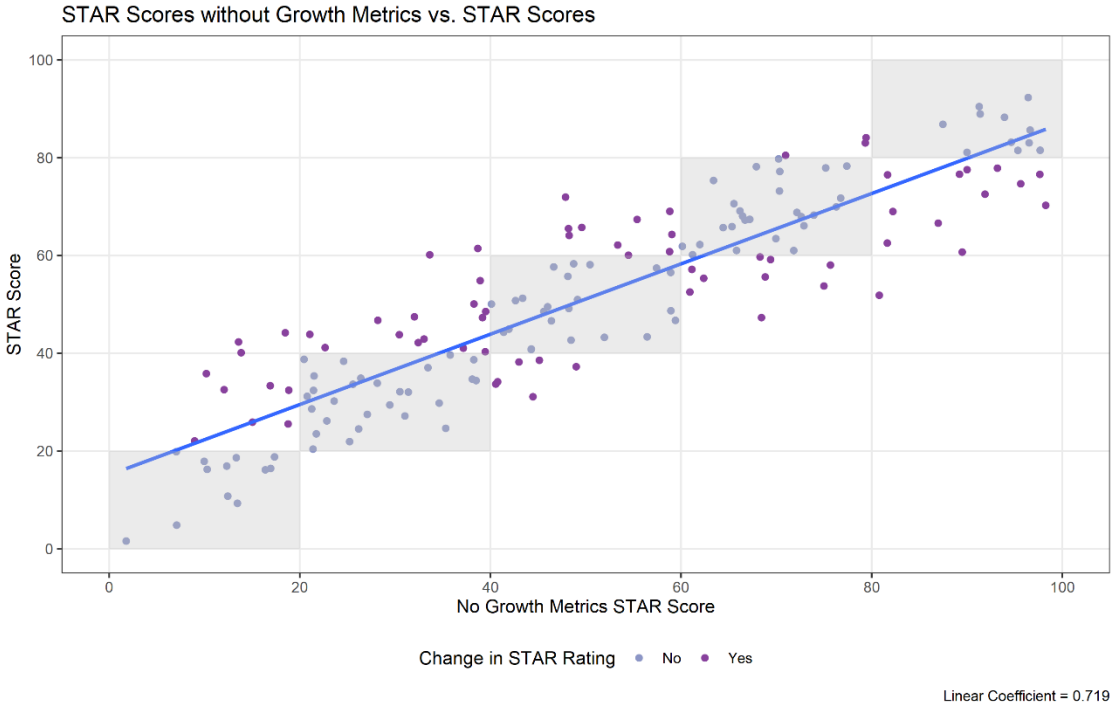


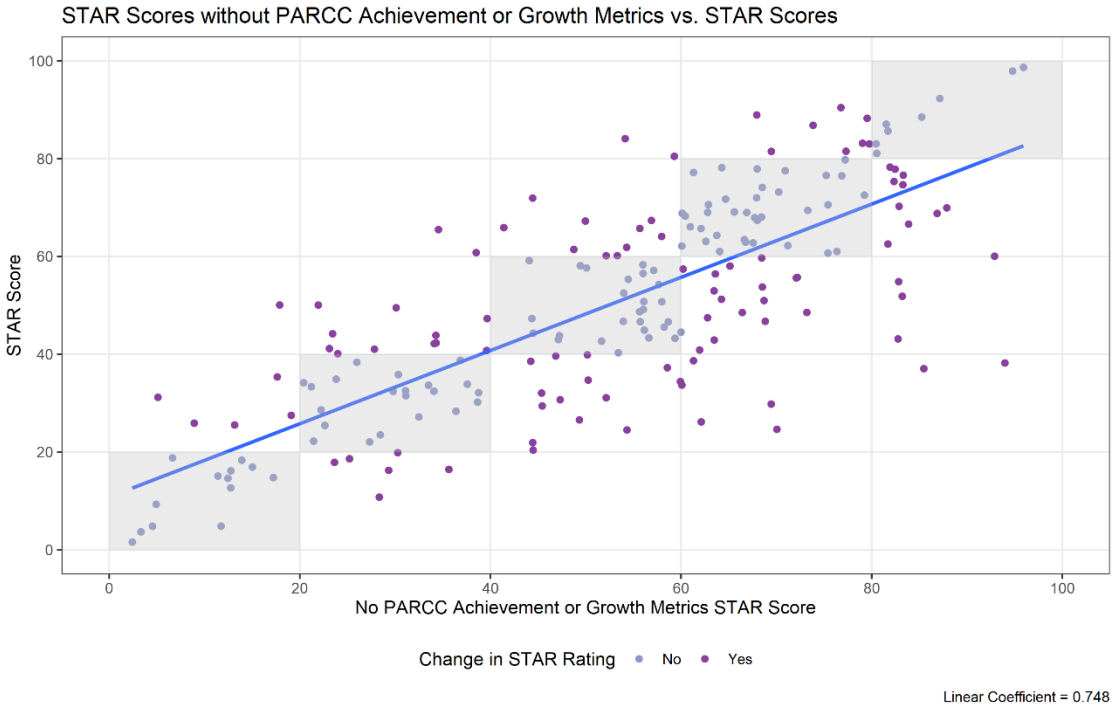
Figure 94 examines the hypothetical scenario where the STAR Framework excludes all growth metrics (Median Growth Percentile, Growth to Proficiency, ACCESS Growth, and Attendance Growth). Results from this analysis reveal that with the removal of growth metrics from the STAR Framework would result in a STAR rating change for 40 percent of schools, with the STAR Ratings increasing for 28 schools and decreasing for 38 schools.

Figure 93



Finally, Figure 95 examines the distribution of STAR scores and ratings if the STAR Framework excluded all state assessment achievement and academic growth metrics. In this scenario, approximately 29 percent of schools would increase in STAR ratings and approximately 20 percent of schools would decrease in STAR ratings.

Figure 94



Examining the Relationship between Growth, Achievement, and STAR Scores

Figures 96 through 103 explore the relationship between performance on growth metrics and academic achievement and a schools' STAR Rating for various student groups. Each plot point represents a school's growth metric score for a particular student group compared against the school's student group score on the PARCC 4+/MSAA 3+ metric, with each plot point colored by the school's overall framework STAR rating.

Achievement by Growth and STAR Rating

Figures 96 through 99 demonstrate that there is a weak relationship between Growth to Proficiency - ELA and ELA PARCC 4+/MSAA 3+ in the All Students group in the Elementary School framework. While the vertical distribution of STAR Ratings shows a relationship between STAR scores and performance on ELA PARCC 4+/MSAA 3+, the relationship between STAR scores and Growth to Proficiency – ELA is weaker, particularly among schools with one-, two-, and three-star ratings. Similar levels of growth are associated with a wide range of STAR scores; this effect is more pronounced for Growth to Proficiency than Median Growth Percentile. For example, a metric score of 45-55 in Growth to Proficiency – ELA for elementary schools is associated with overall framework STAR scores that range from 16 to 81.

The lower slopes for the At-Risk, English Learners, and Students with Disabilities student groups, compared to the All Students group, indicate that higher growth for these student groups does not necessarily equate to higher achievement rates in that year.

Figure 95

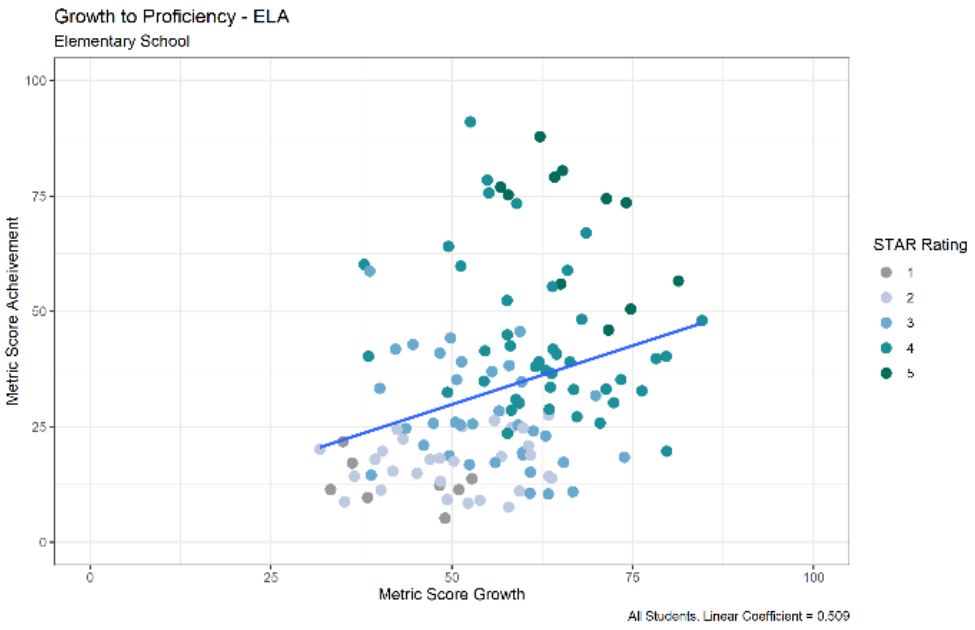


Figure 96

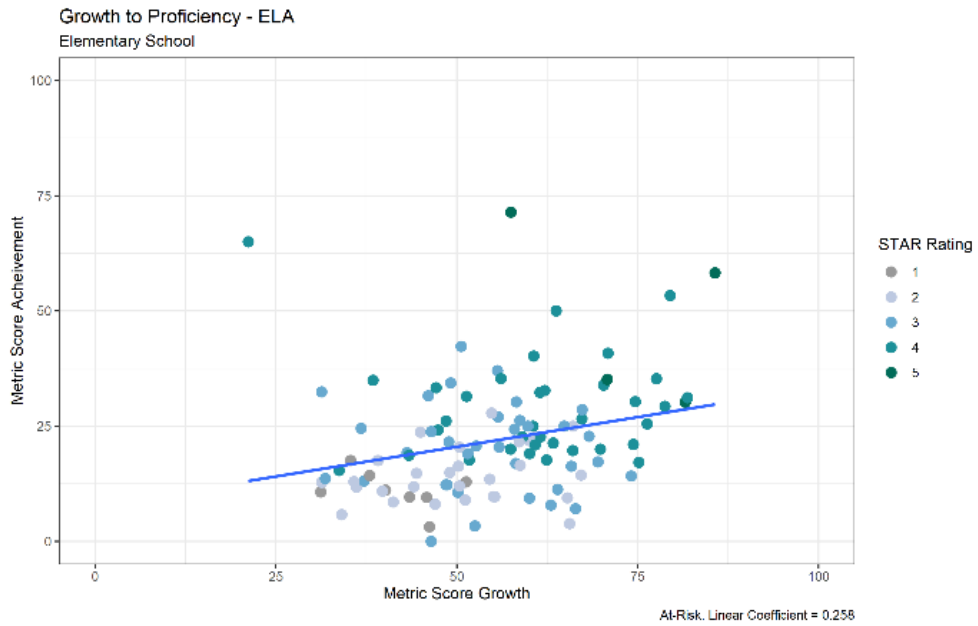


Figure 97

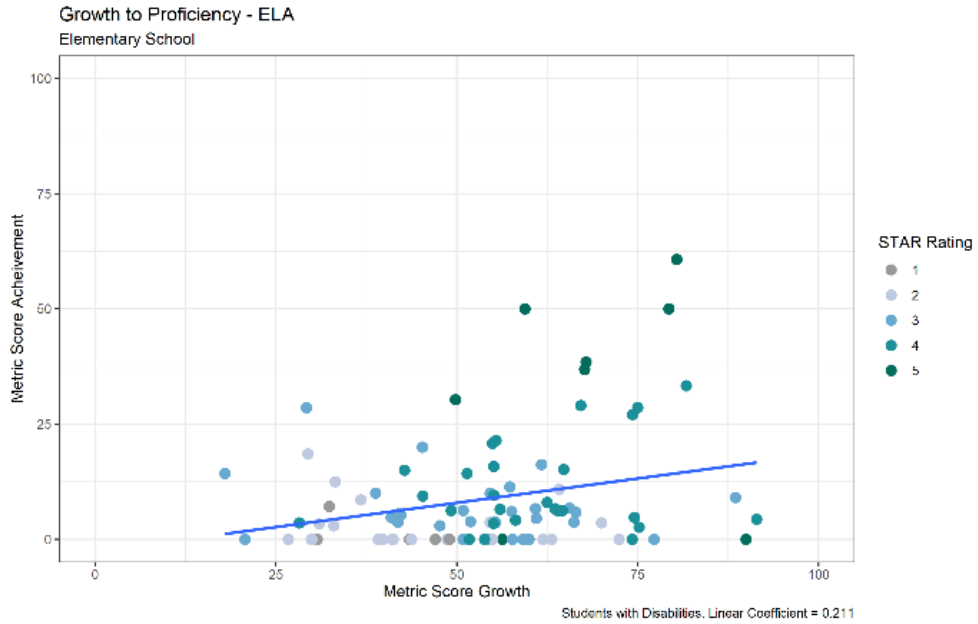
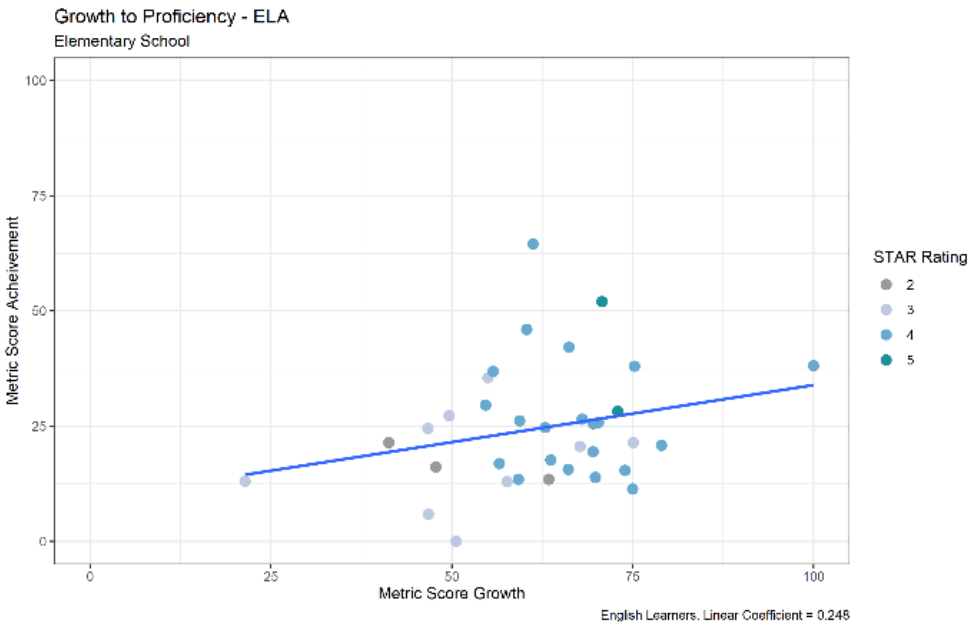


Figure 98


Growth to Proficiency - ELA
Elementary School
Metric Score Acheivement
Metric Score Growth
0
25
50
75
100
STAR Rating
2
3
4
5
English Learners. Linear Coefficient = 0.248

Figures 100 through 103 show that Middle schools show a significantly stronger relationship between Growth to Proficiency - ELA and ELA PARCC 4+/MSAA 3+ than Elementary schools. For the All Students group, an increase of one point in the Growth to Proficiency-ELA metric is correlated with a 1.14 point increase in the ELA PARCC 4+/MSAA 3+ metric. This relationship is strong for the At-Risk and English Learners student groups, but weaker for the Students with Disabilities student group.

Figure 99

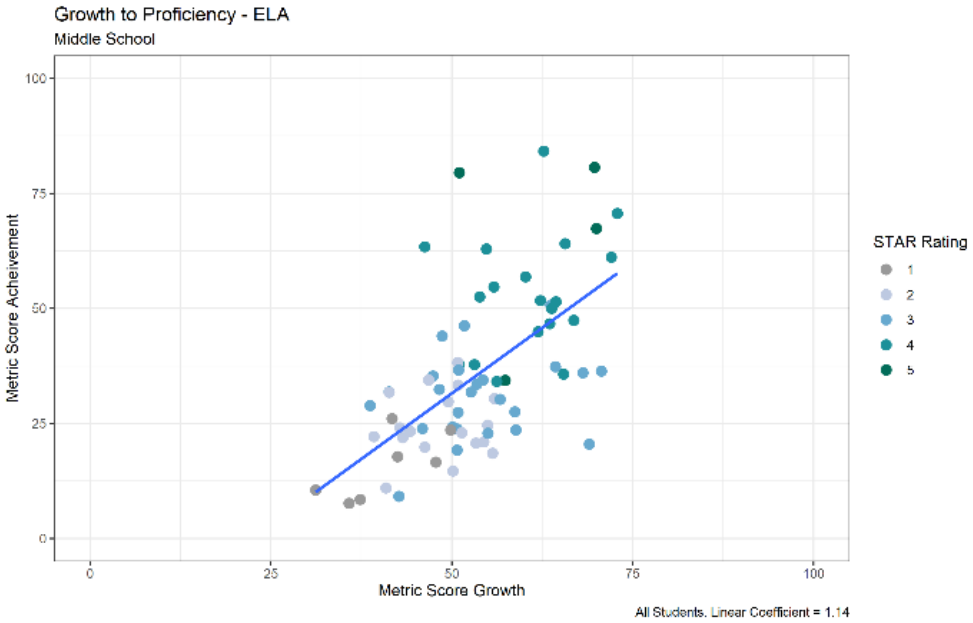


Figure 100

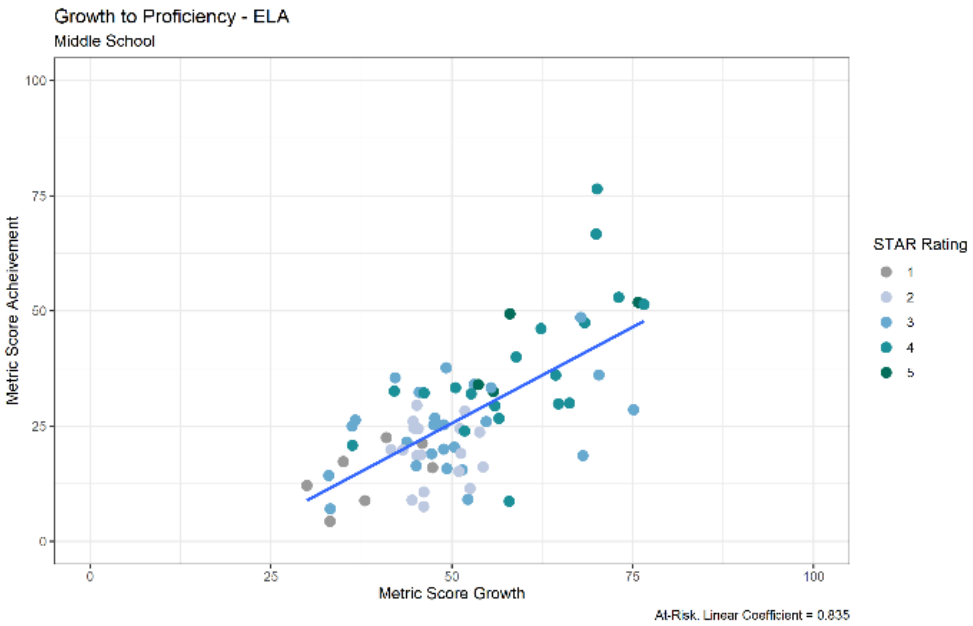


Figure 101

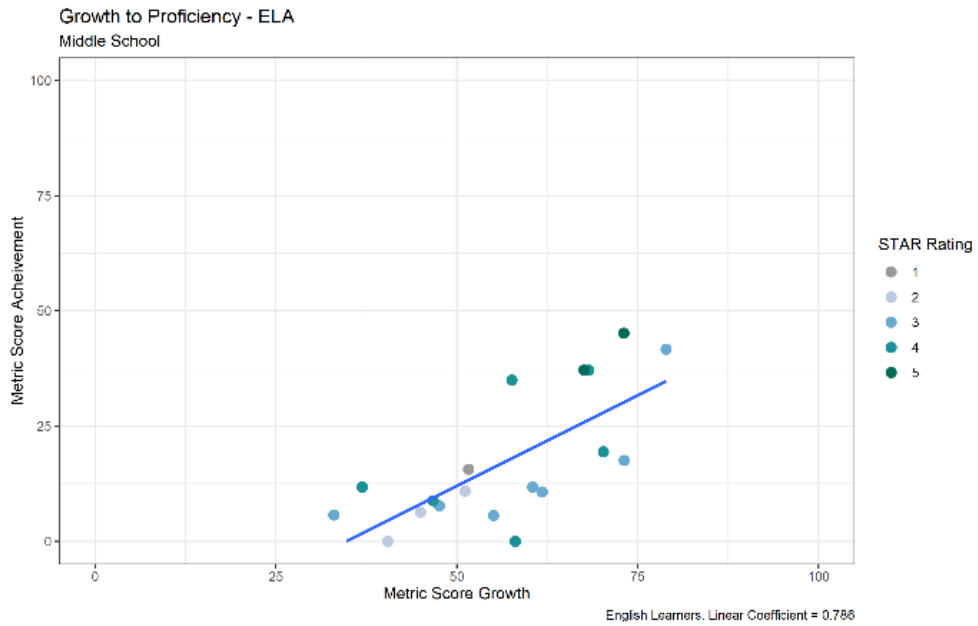
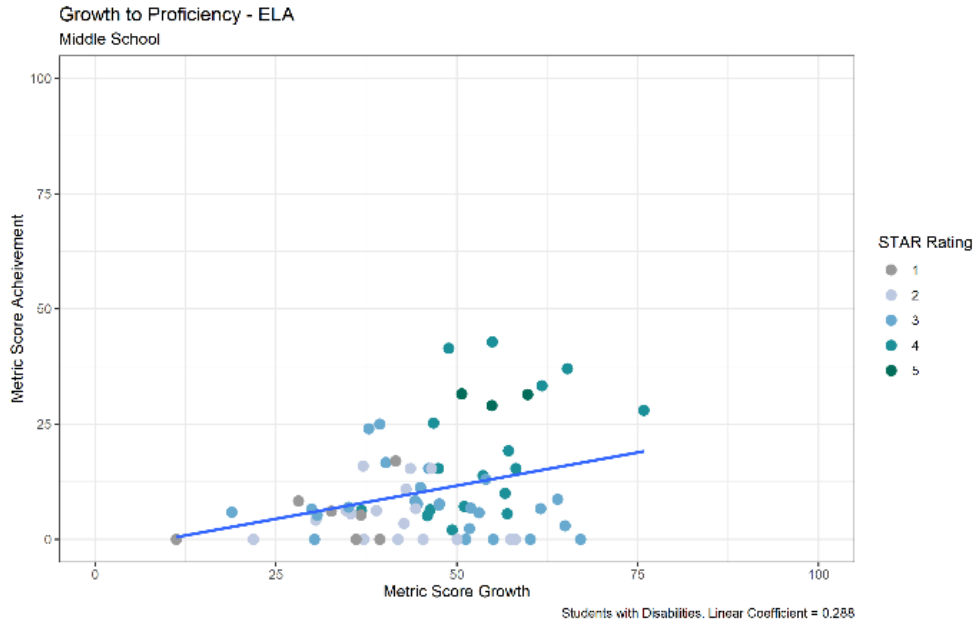


Figure 102



Figures 104 through 107 demonstrate that there is an even weaker relationship between Growth to Proficiency - Math and Math PARCC 4+/MSAA 3+ in the All Students group in the Elementary School framework than for ELA. The relationship is stronger for the At-Risk student group and similar for the Students with Disabilities group. The English Learner student group shows a slope of approximately zero, which aligns with the understanding that students who are learning English may be improving their performance on the state assessments, but not yet showing proficiency.

Figure 103

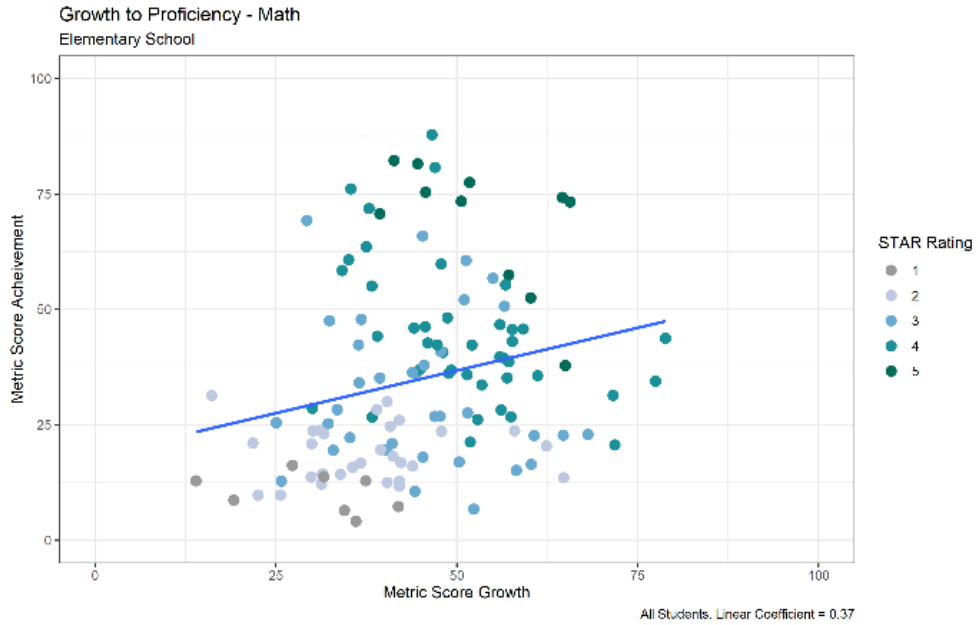


Figure 104

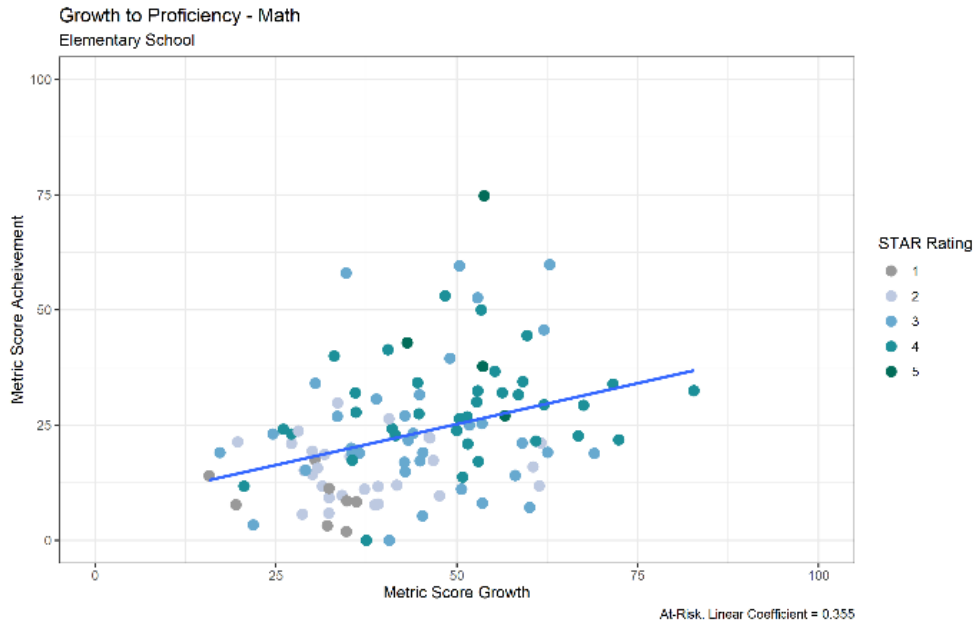


Figure 105

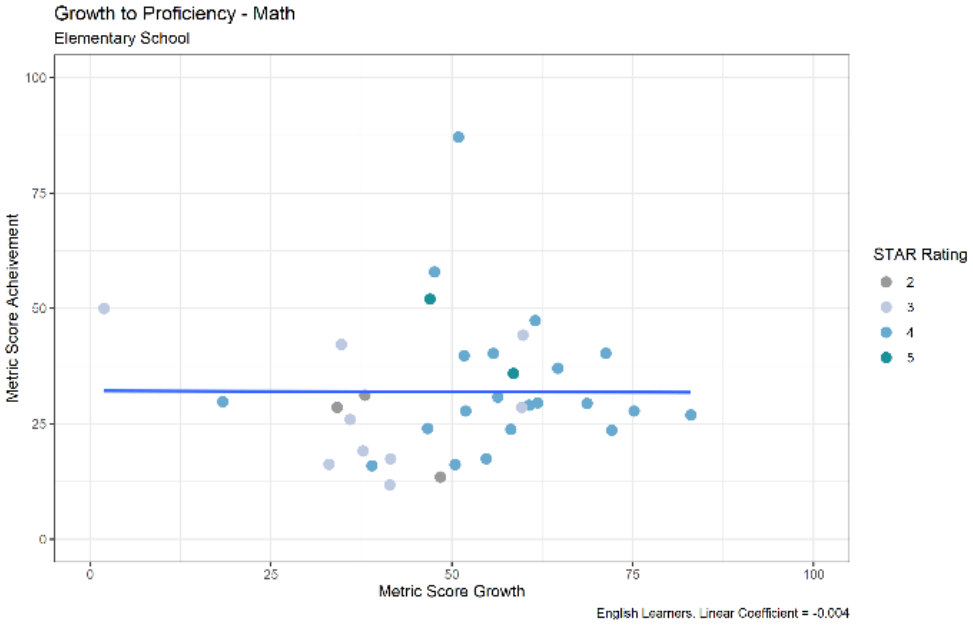
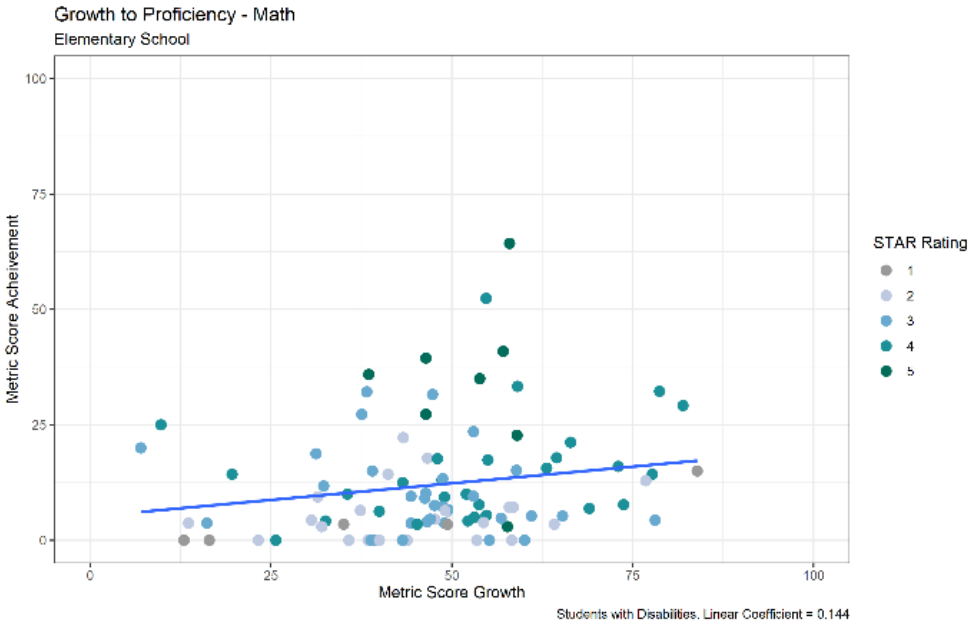


Figure 106



Figures 108 through 111 show that Middle schools show a significantly weaker relationship between Growth to Proficiency - Math and Math PARCC 4+/MSAA 3+ than ELA.

Figure 107

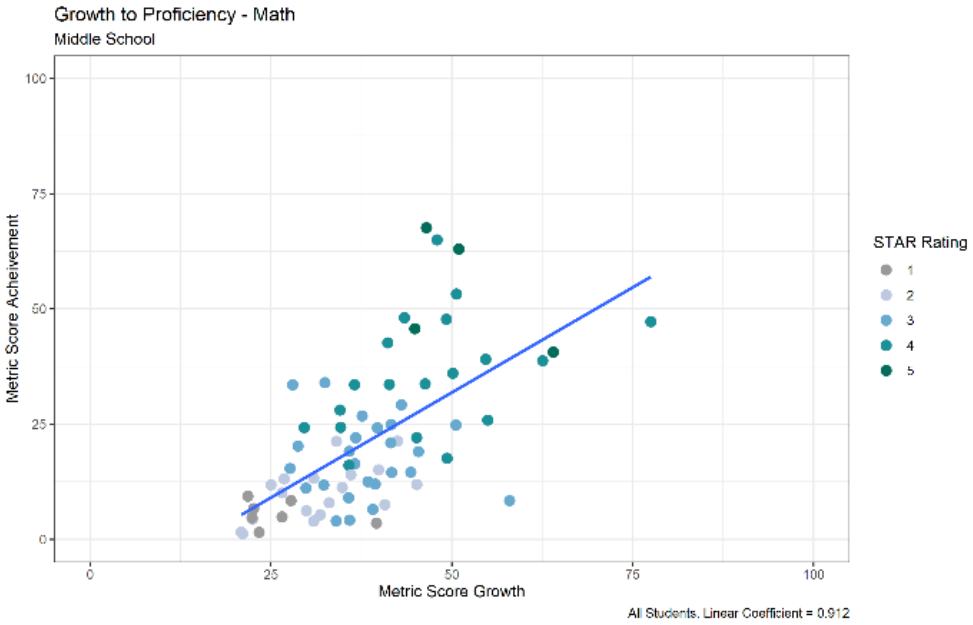


Figure 108

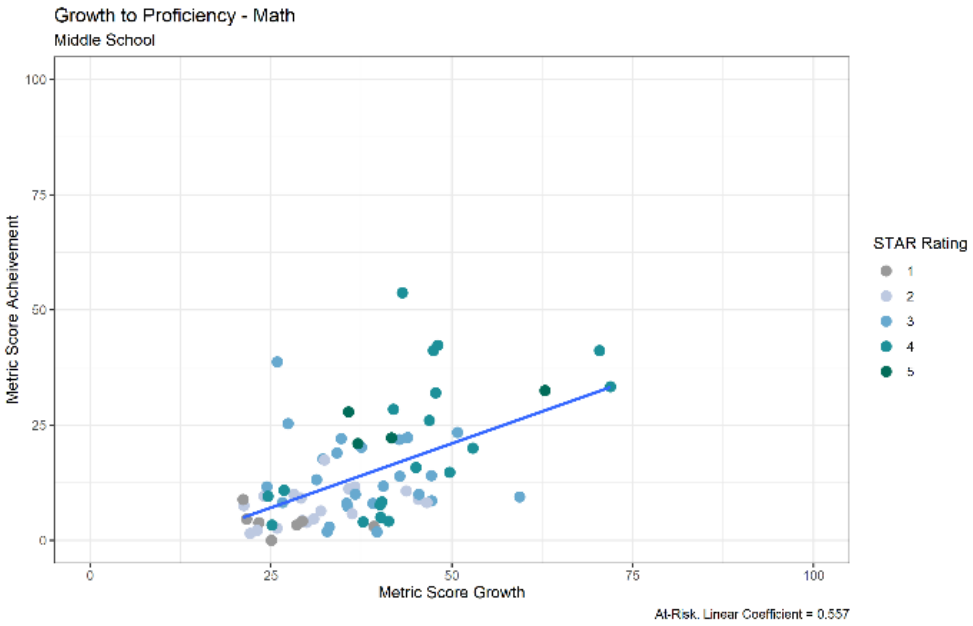


Figure 109

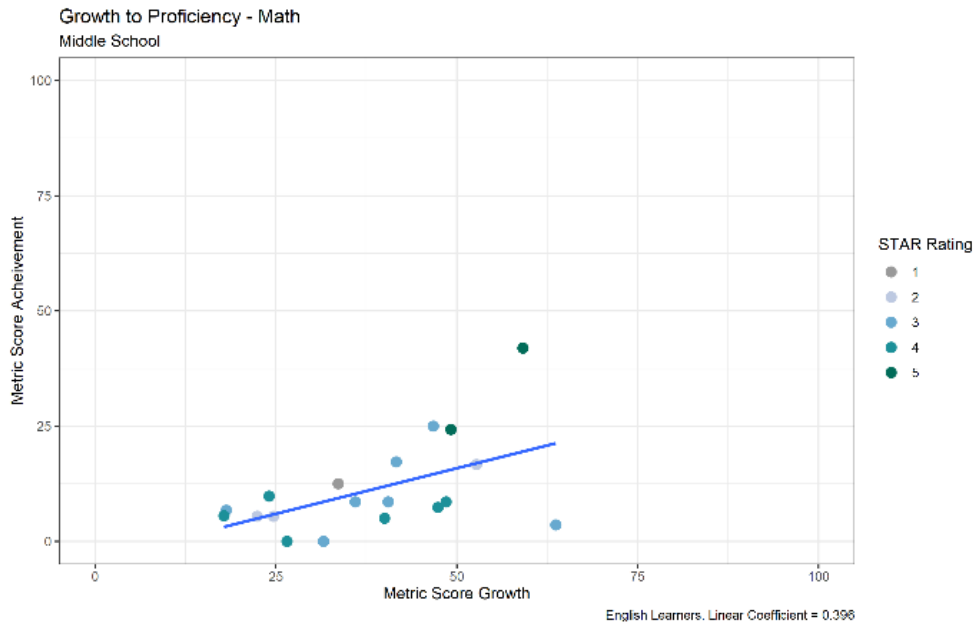


Figure 110

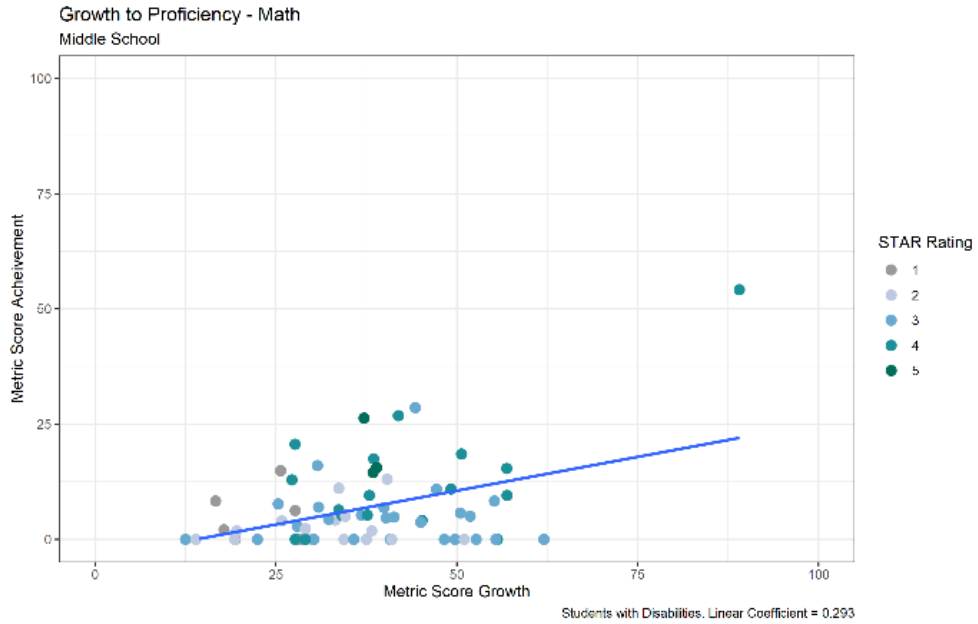


Figure 112 shows that Median Growth Percentile – ELA has a stronger relationship with ELA PARCC 4+/MSAA 3+ than Growth to Proficiency - ELA in the All Students group in the Elementary School framework, with a linear coefficient of approximately one. Schools with Median Growth Percentile – ELA scores for the All Students group of 45-55 show a similar range of overall framework STAR scores as Growth to Proficiency – ELA, ranging from 16 to 78.

The lower slopes for the At-Risk, English Learners, and Students with Disabilities student groups, compared to the All Students group, indicate that higher growth for these student groups does not necessarily equate to higher achievement rates in that same year. Metric scores for Median Growth Percentile – ELA are clustered in the 50-75 point range for English Learners, compared to a more even distribution from 25 to 75 points for the All Students and At-Risk student groups. The Students with Disabilities group shows lower growth and achievement than the other three student groups shown. This pattern differs from that shown in figure 115, which shows that Students with Disabilities exhibit a wider range of growth scores on the Growth to Proficiency – ELA metric.

Figure 111

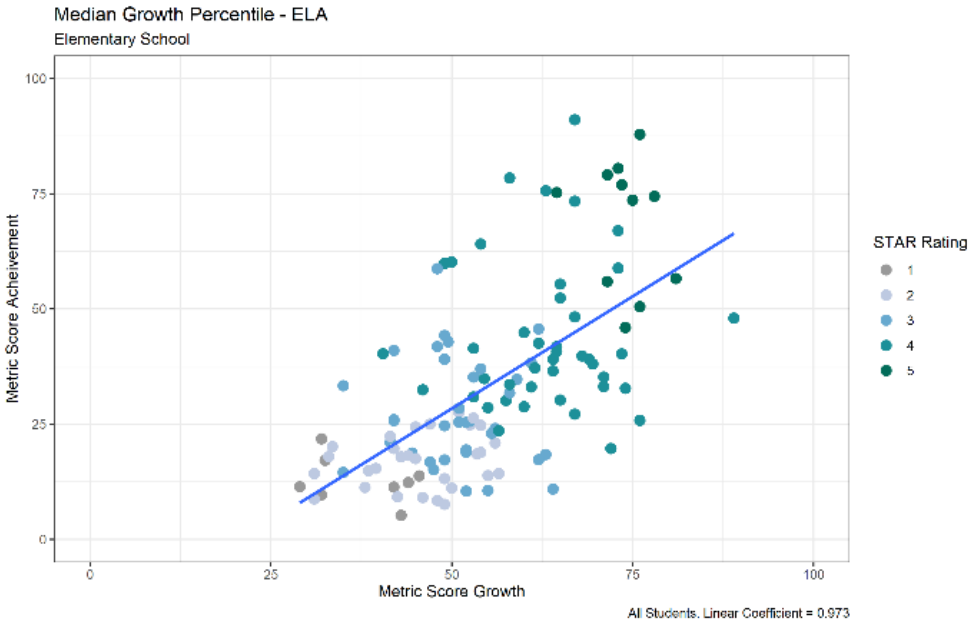


Figure 112

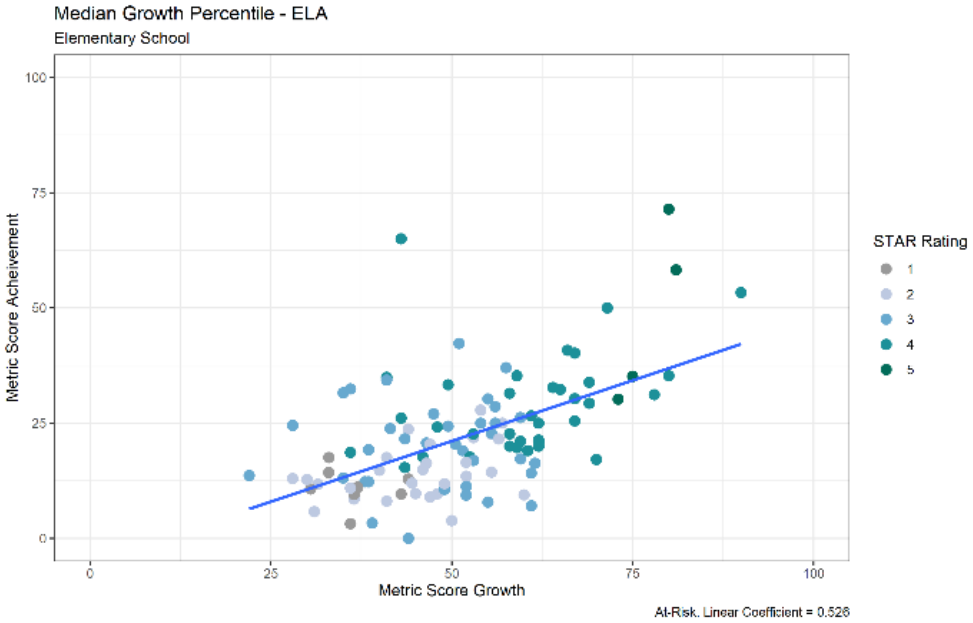


Figure 113

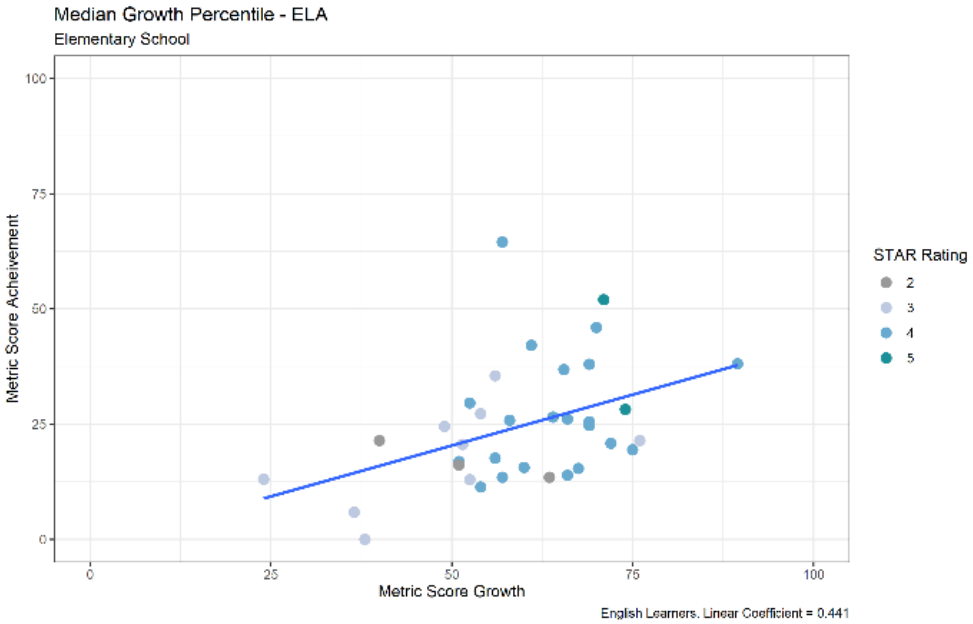


Figure 114

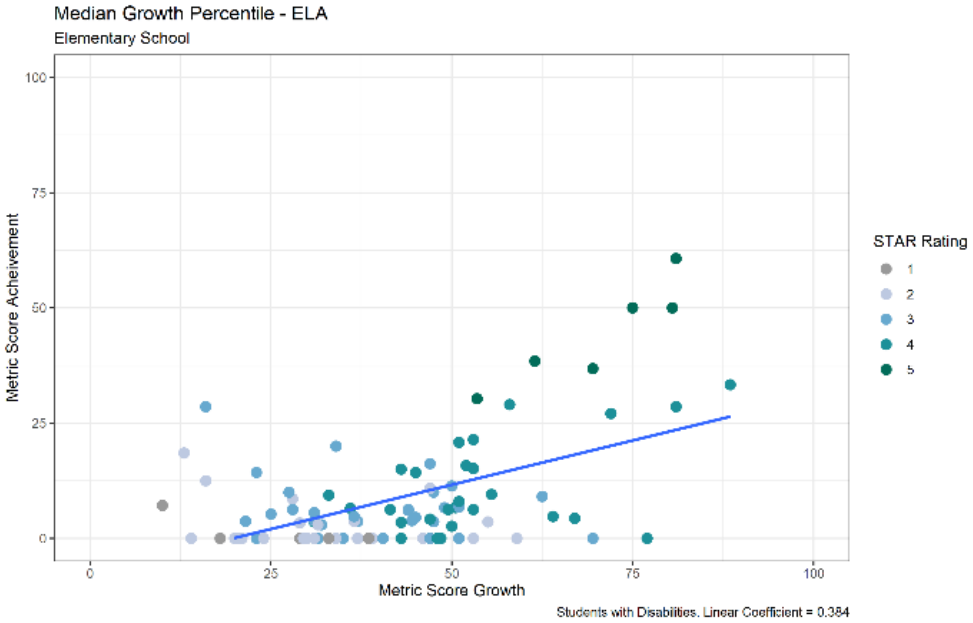

Median Growth Percentile - ELA
Elementary School
Metric Score Acheivement
Metric Score Growth
0
25
50
75
100
STAR Rating
1
2
3
4
5
Students with Disabilities. Linear Coefficient = 0.384

Figure 116 shows that the Median Growth Percentile - ELA has a similar, but slightly weaker relationship with ELA PARCC 4+/MSAA 3+ compared to Growth to Proficiency - ELA in the All Students group in the Middle School framework.

Figure 115

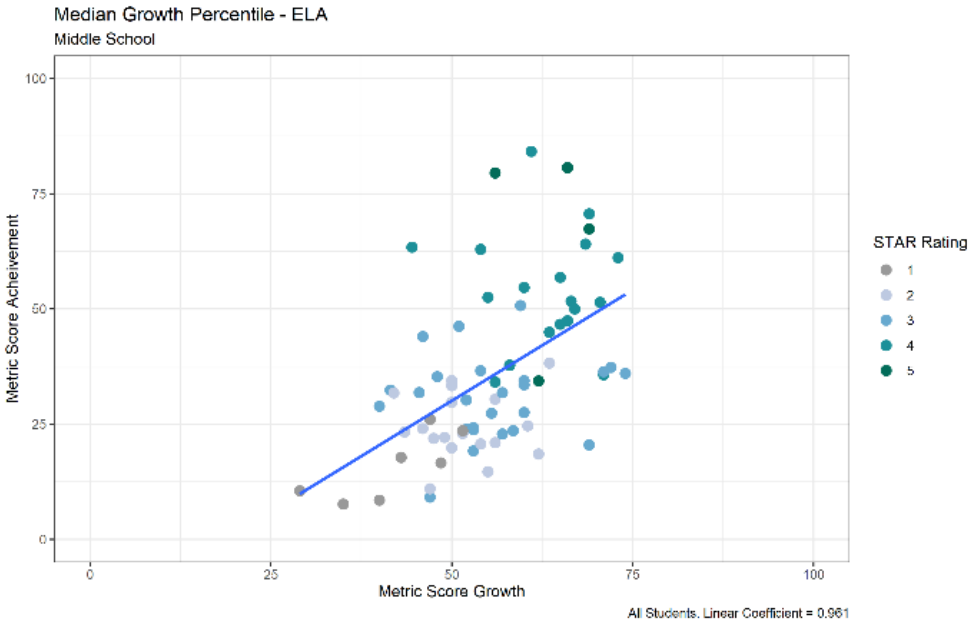


Figure 116

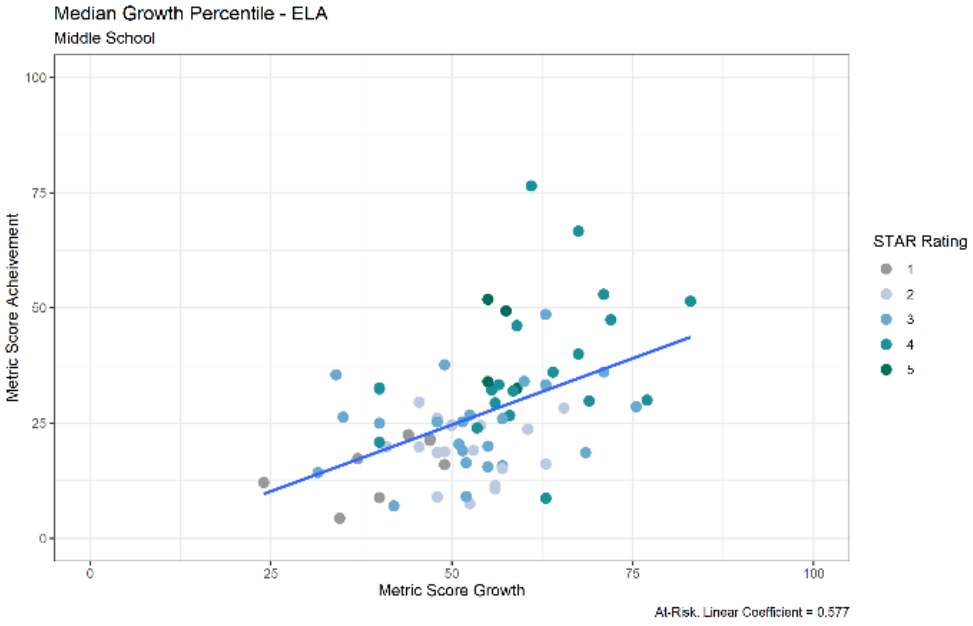


Figure 117

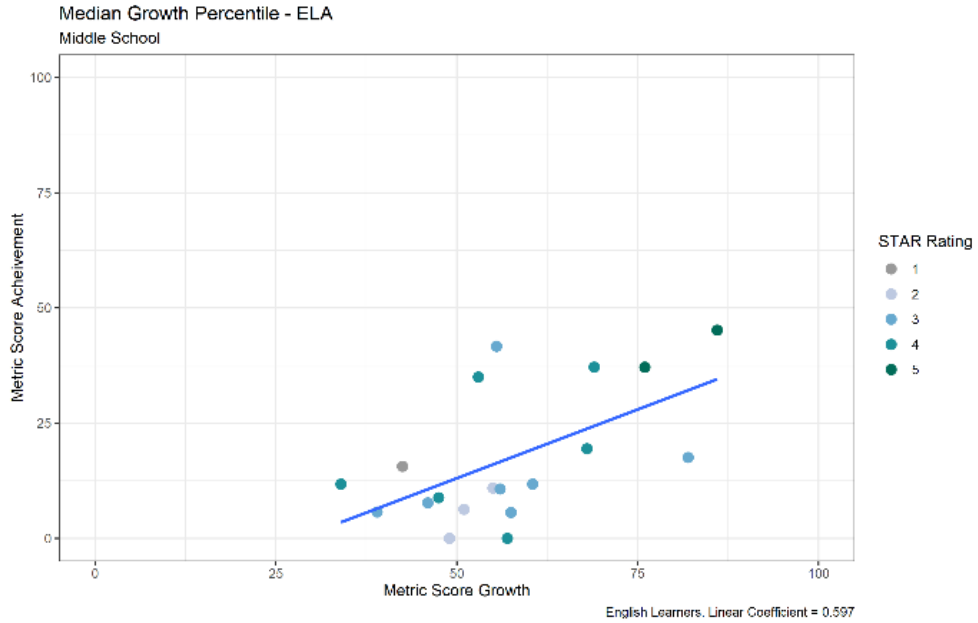


Figure 118

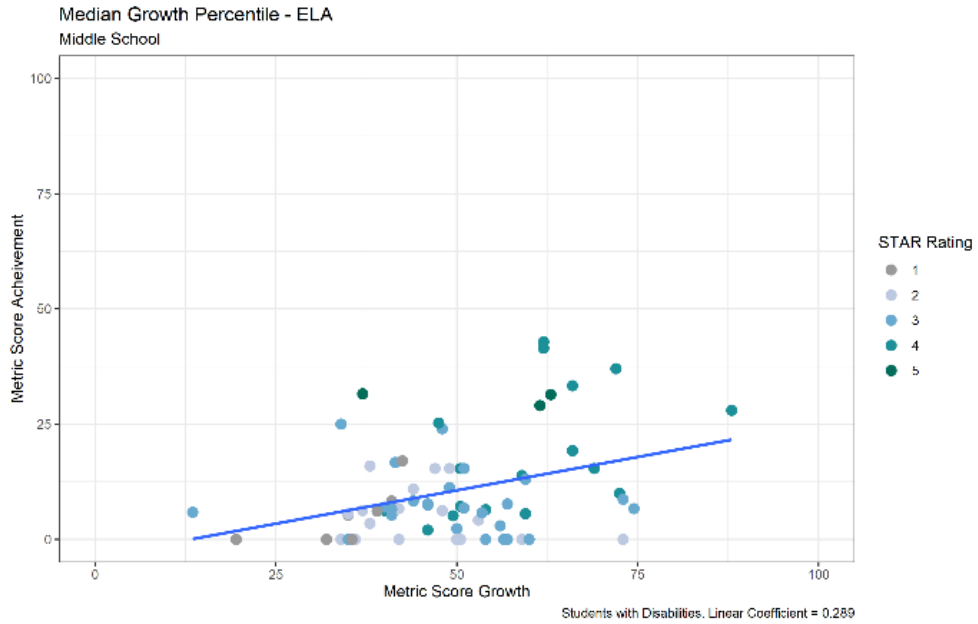


Figure 119

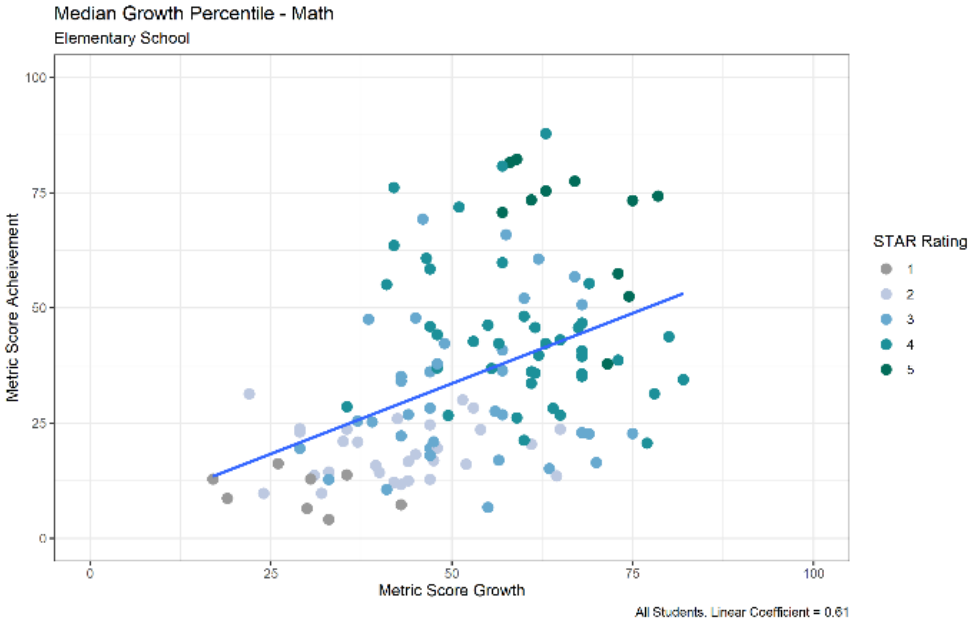


Figure 120

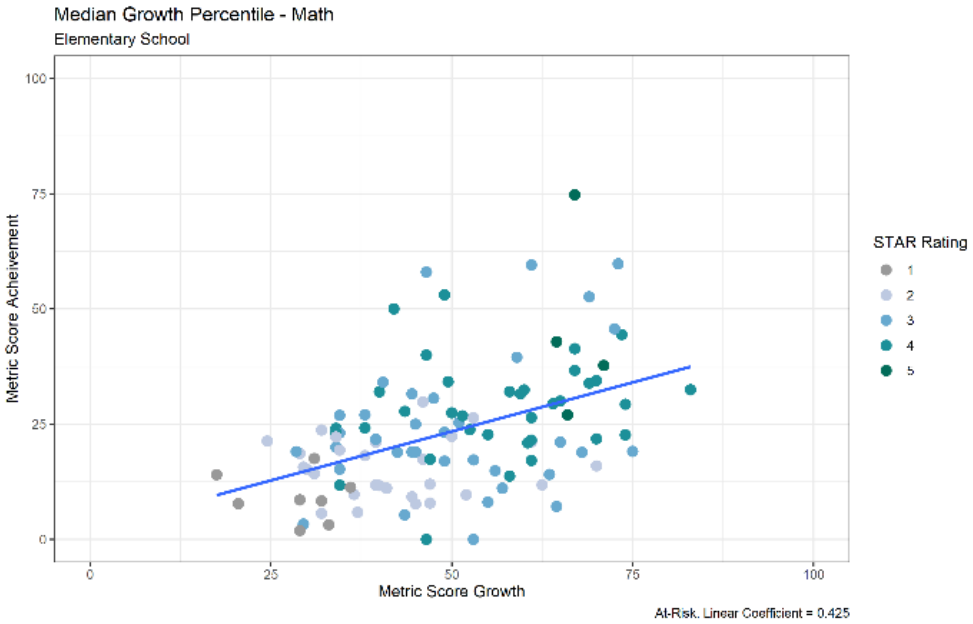


Figure 121

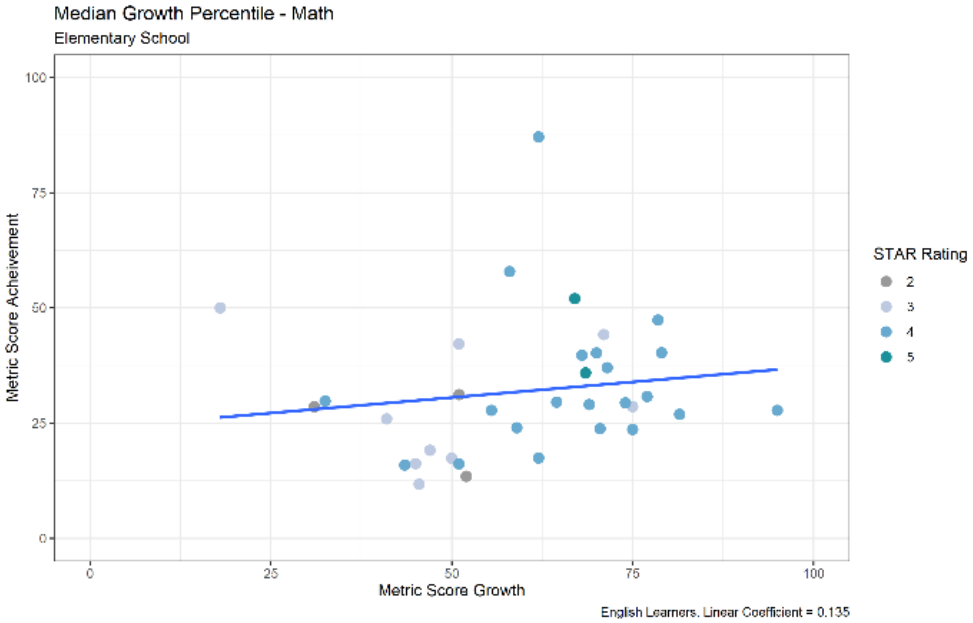


Figure 122

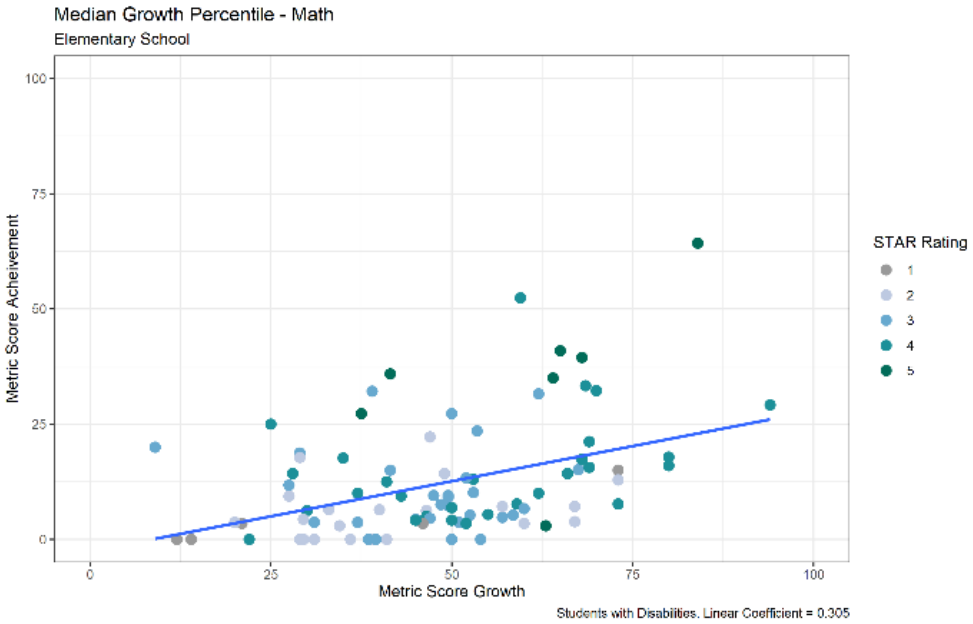


Figure 123

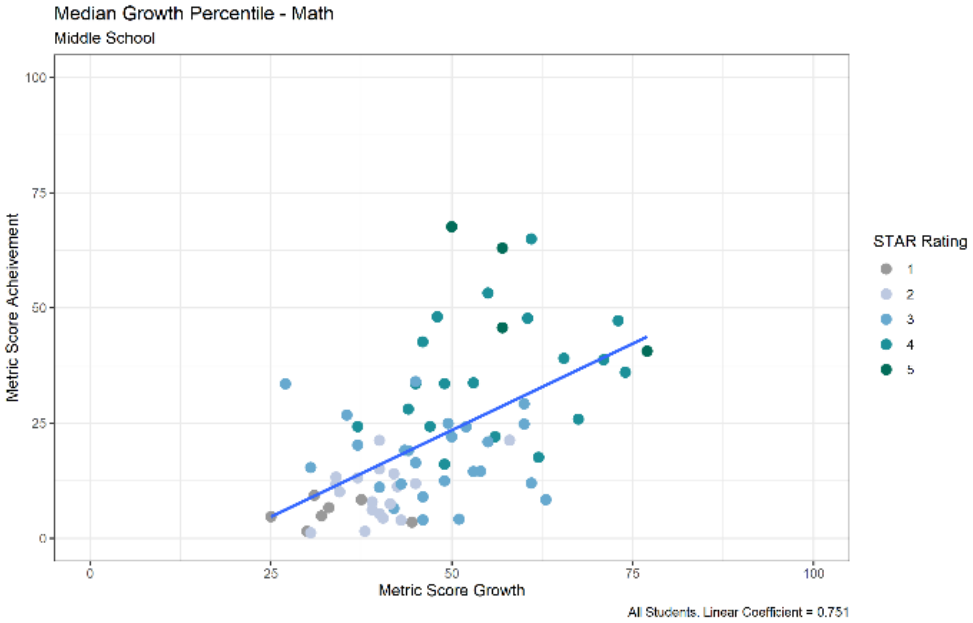


Figure 124

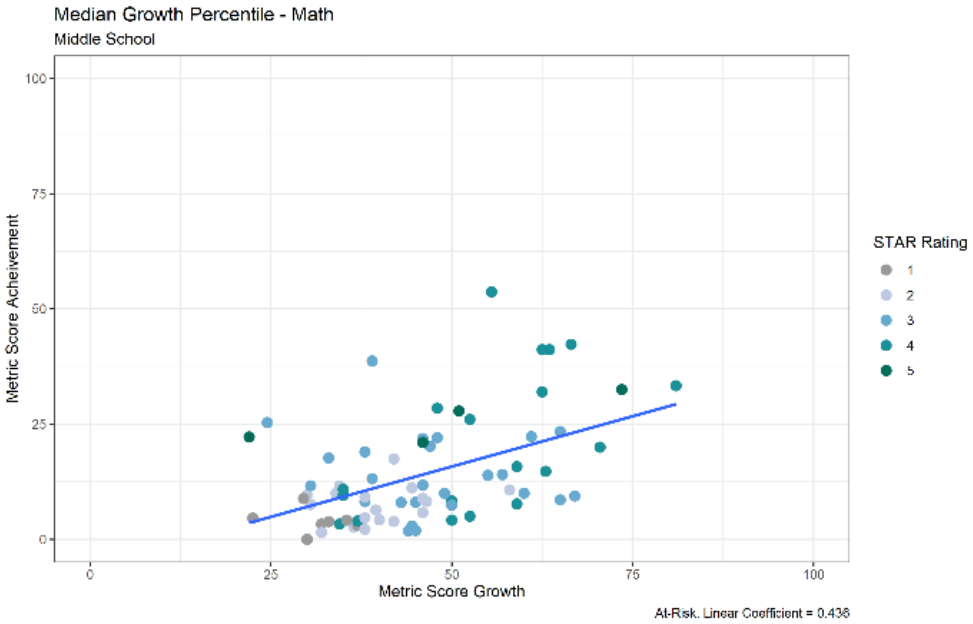


Figure 125

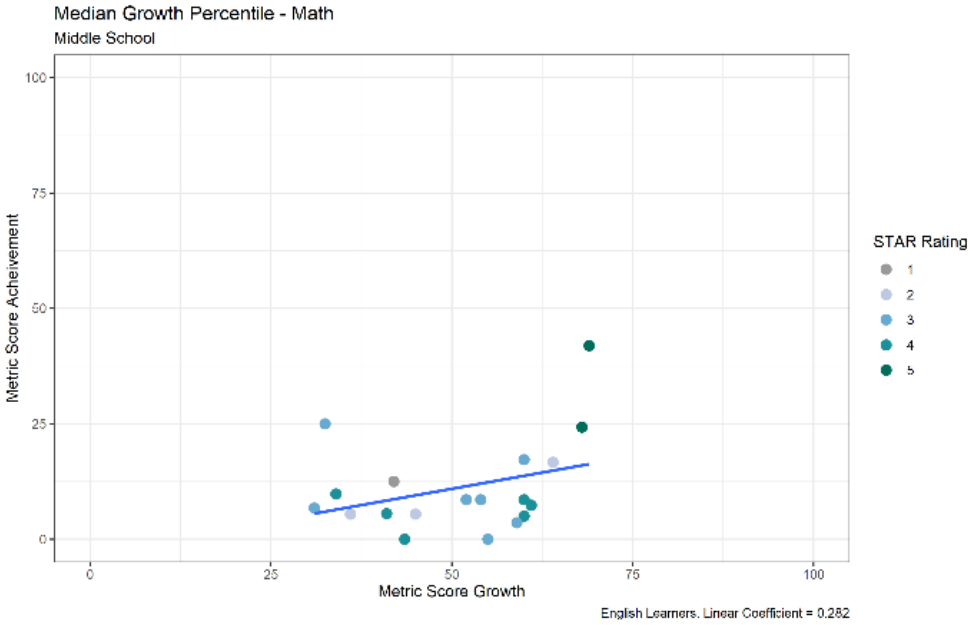
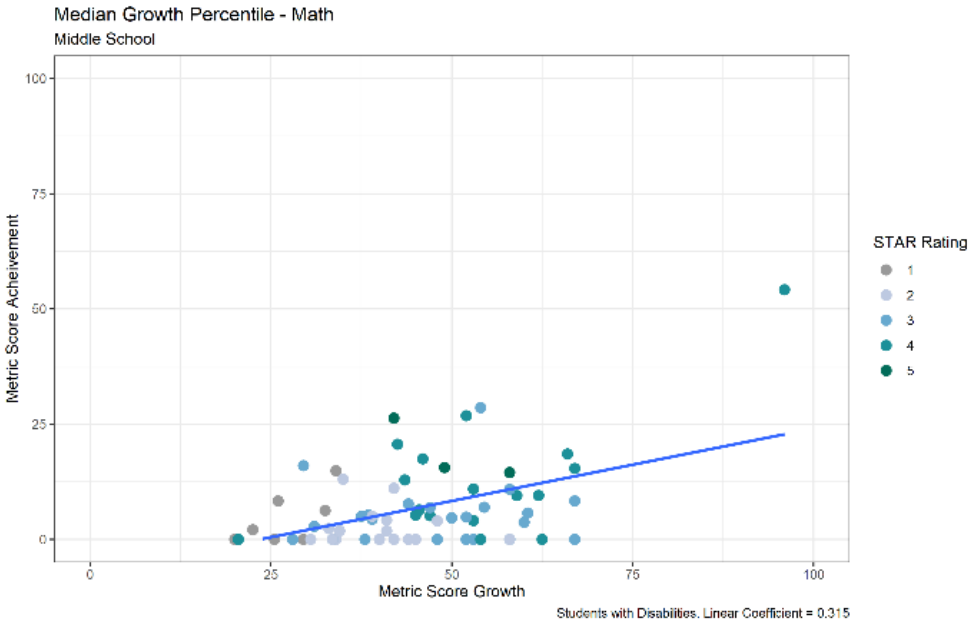


Figure 126



Scatter Plots and Linear Prediction of STAR Scores by Growth Metric Scores, by Framework and Student Group

This section of figures shows the relationship between schools' performance on the Growth to Proficiency and Median Growth Percentile metrics and STAR score, by student group and framework (student groups are listed in the bottom-right corner of each figure). These analyses demonstrate a positive association between growth metric scores and STAR scores for schools in each framework. Students who are at-risk, students with disabilities, and English learners student group scores on the growth metrics are much less related to schools' STAR score than the corresponding relationship between the all students group and schools' STAR score. Data points are more widely scattered, and the slope of the best fit line is less vertical in the figures showing the relationship between metric score and STAR score for students who are at-risk, students with disabilities, and English learners, which indicates that growth of students in these student groups may not be as highly correlated with higher STAR scores as the all students group, which is not unexpected given the weights on student groups in the framework.

Figure 127

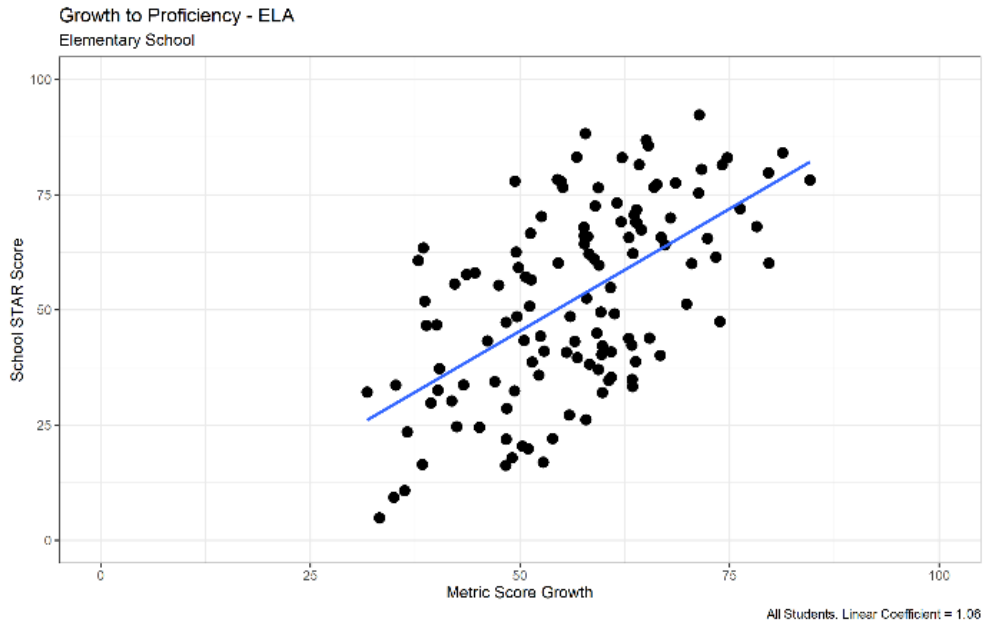


Figure 128

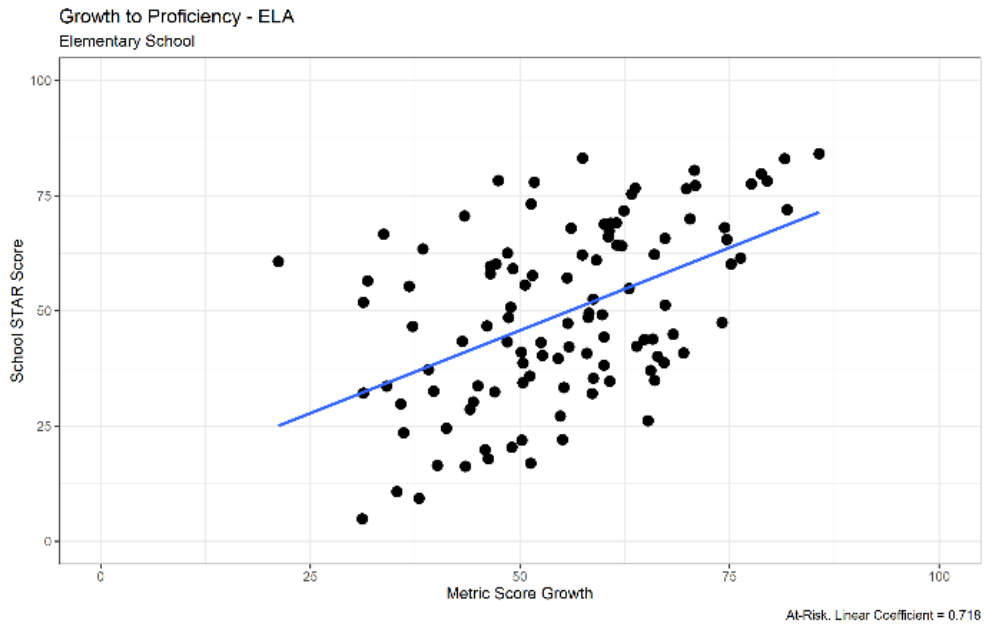


Figure 129

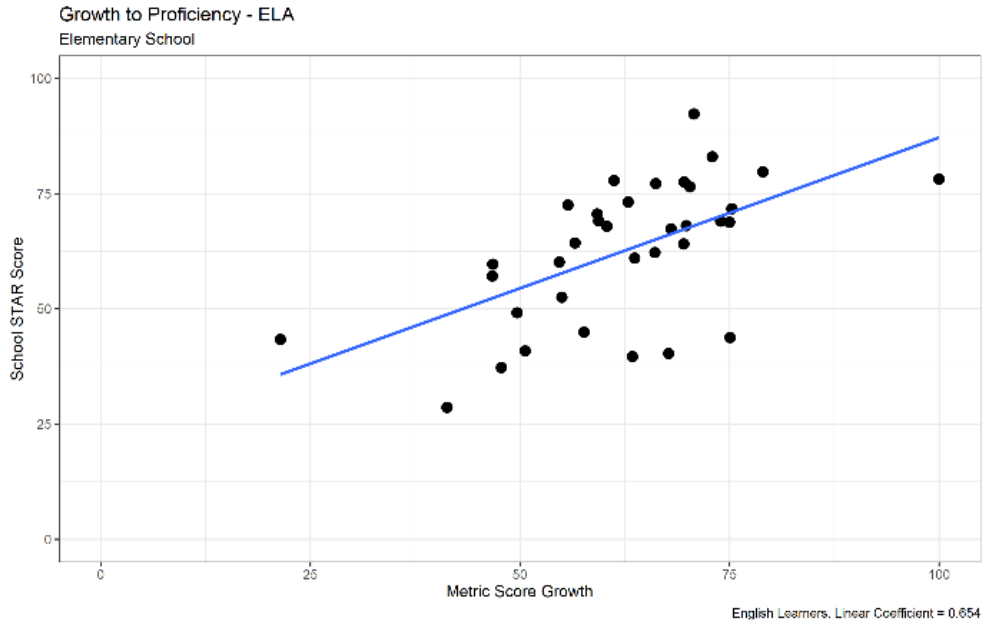


Figure 130

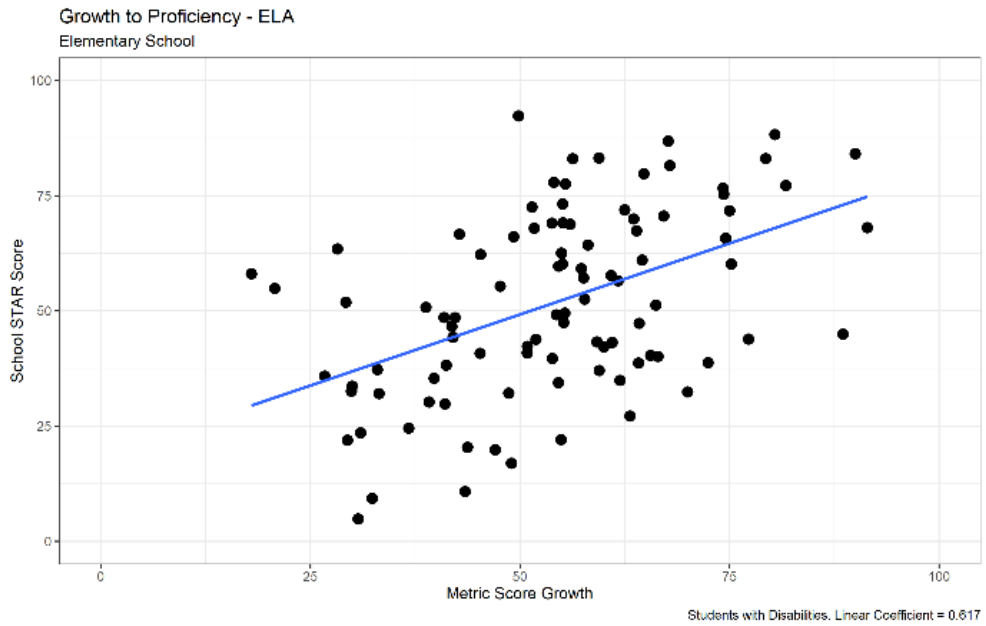

Growth to Proficiency - ELA
Elementary School
School STAR Score
100
75
50
25
0
0
25
50
75
100
Metric Score Growth
Students with Disabilities. Linear Coefficient = 0.617

Figure 131

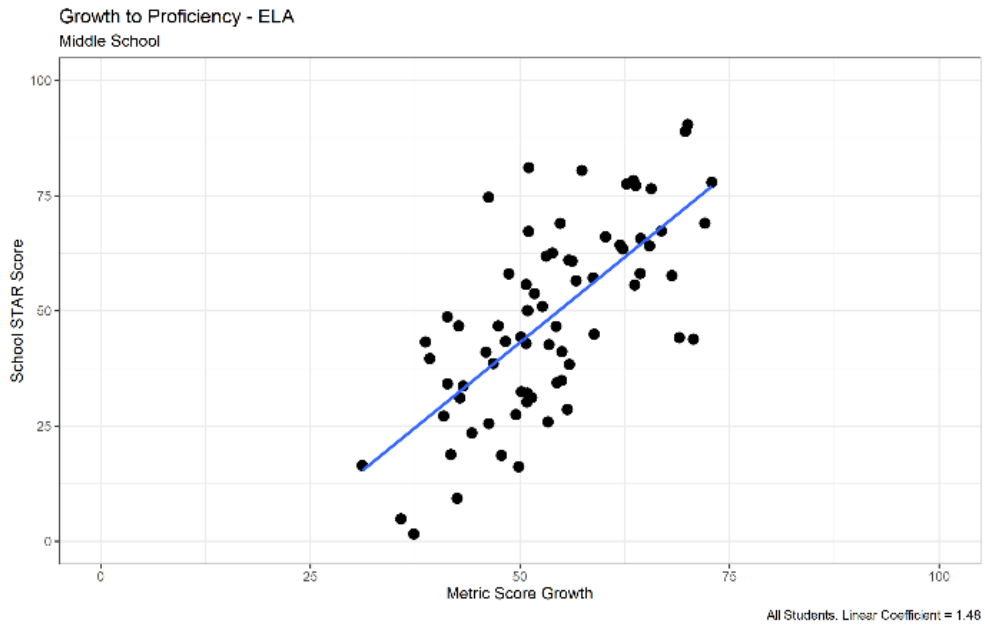


Figure 132

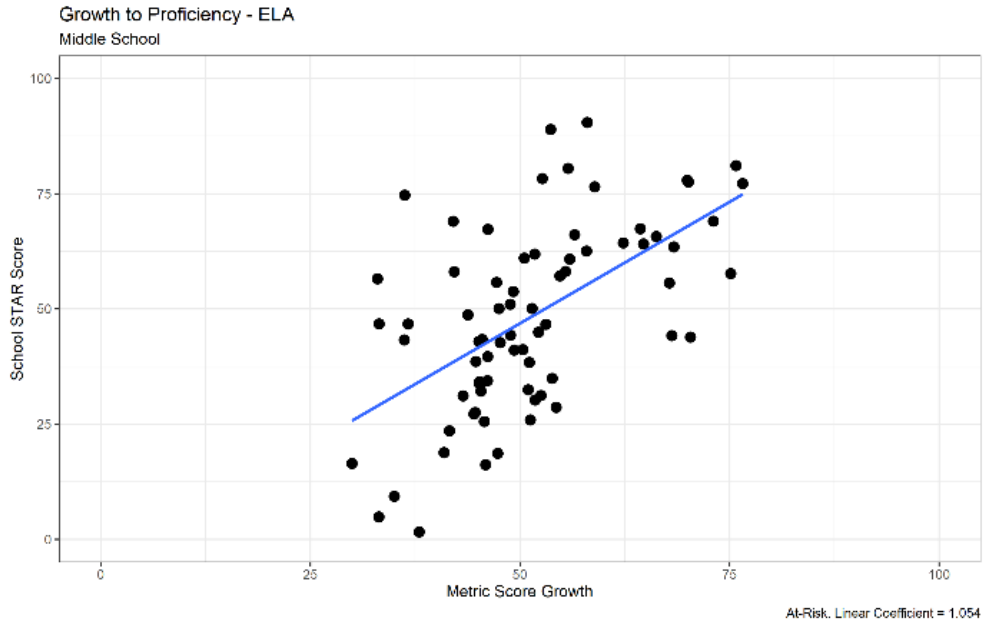


Figure 133

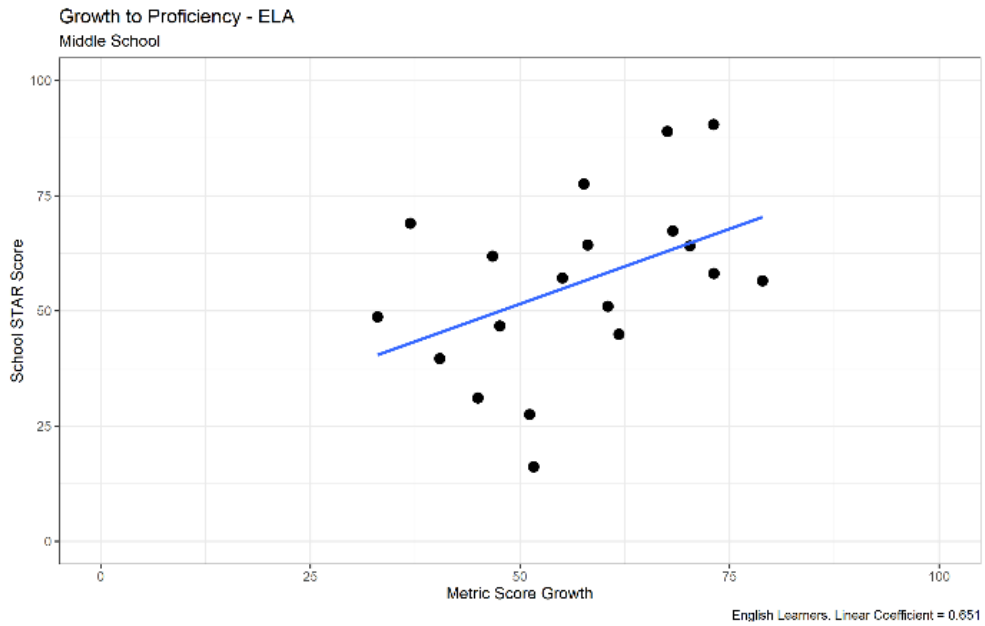


Figure 134

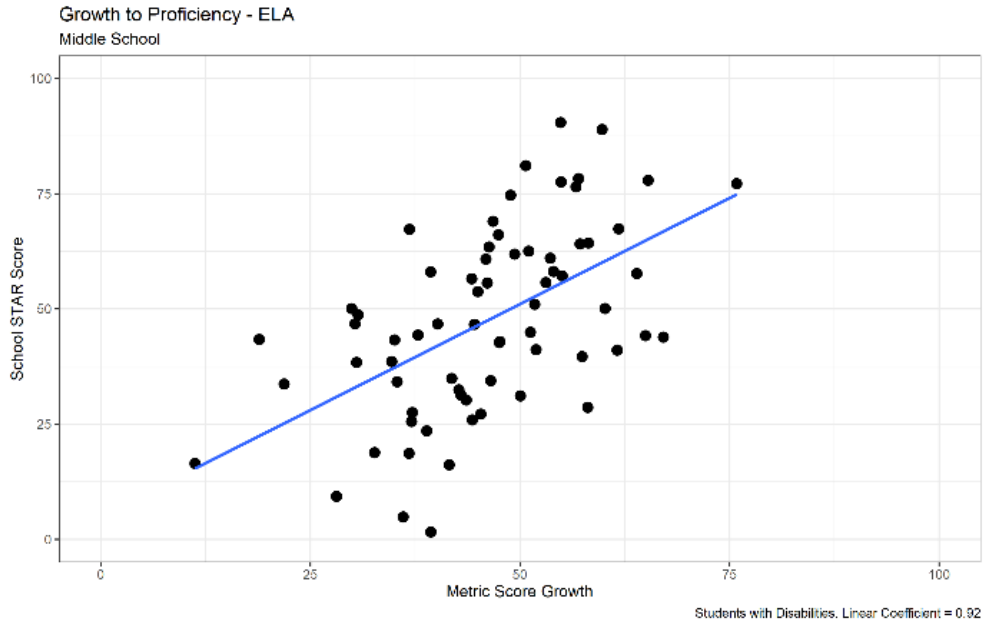


Figure 135

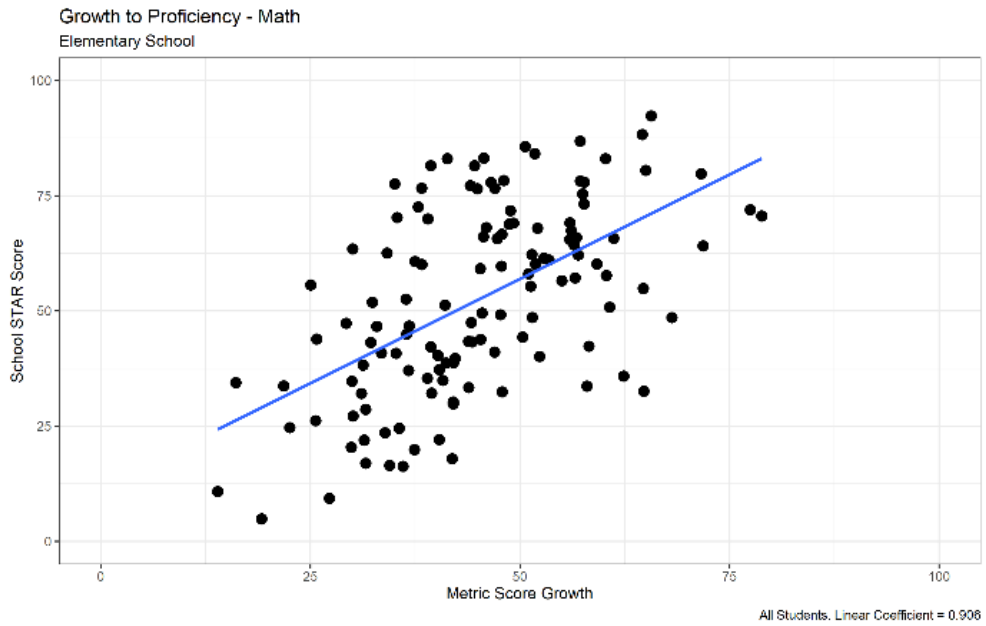


Figure 136

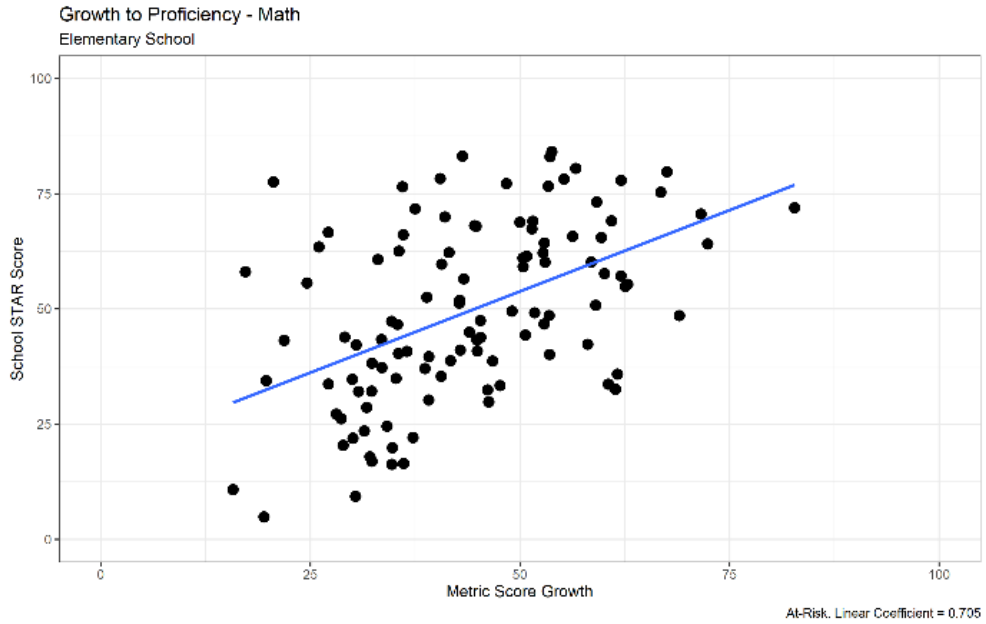


Figure 137

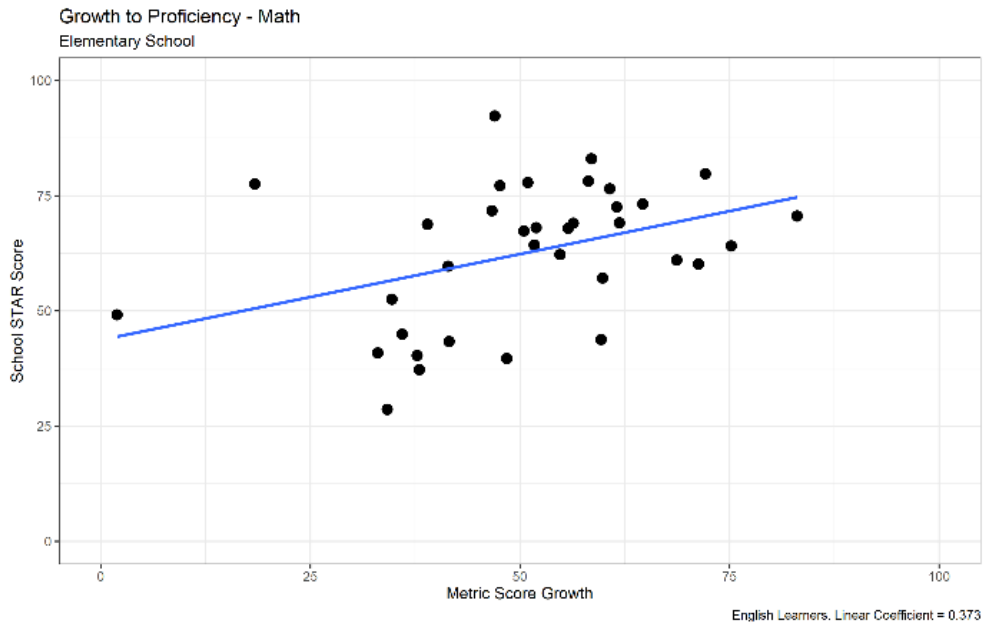


Figure 138

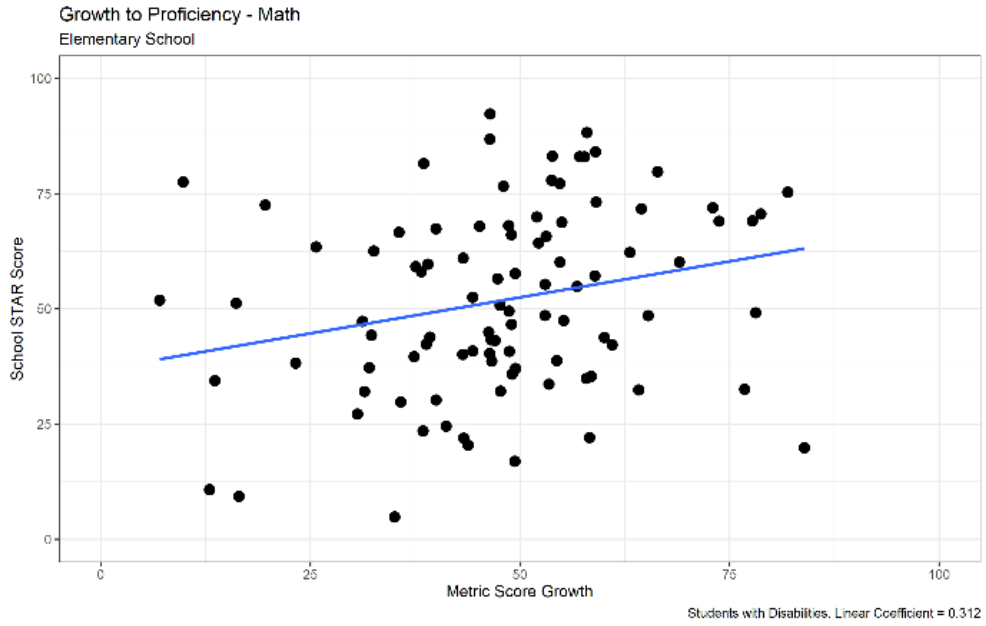


Figure 139

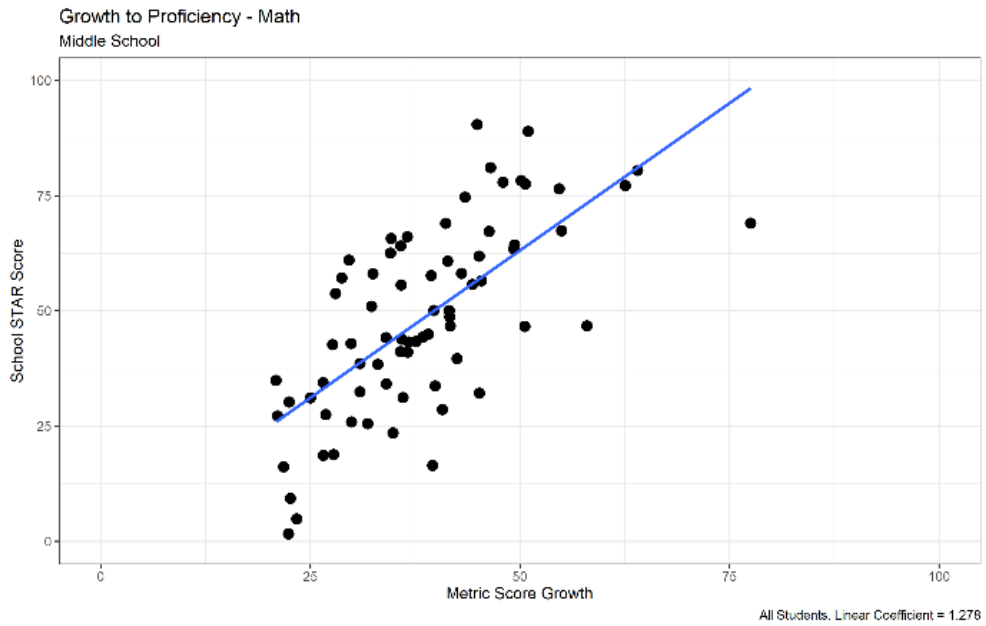


Figure 140

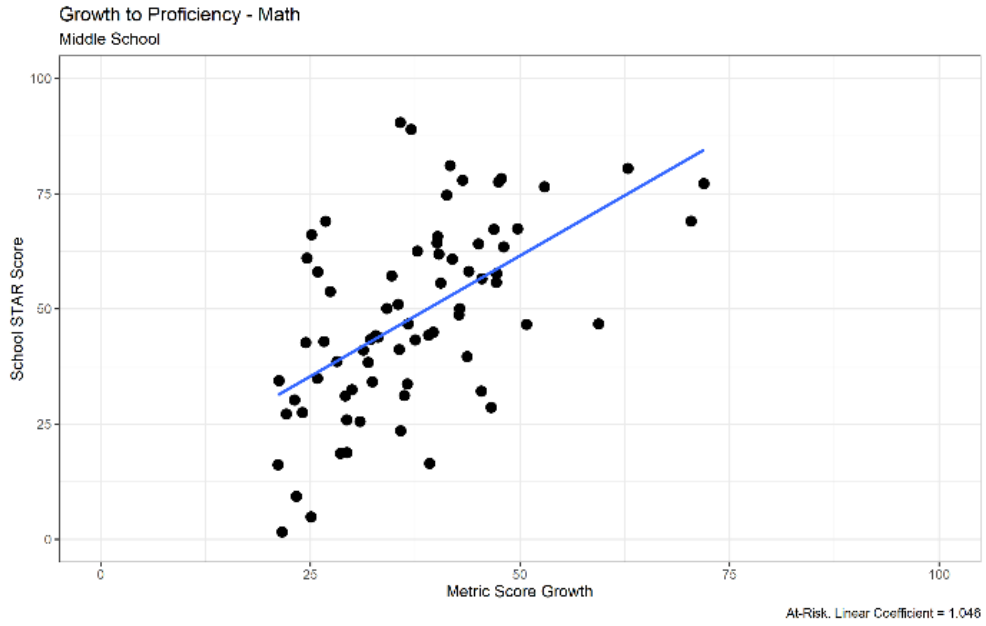


Figure 141

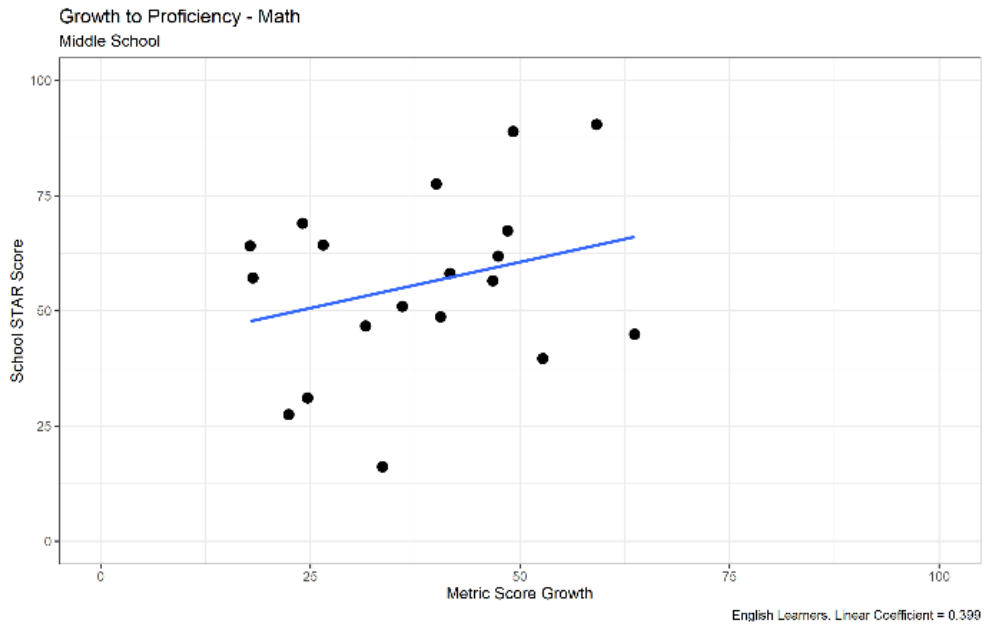


Figure 142

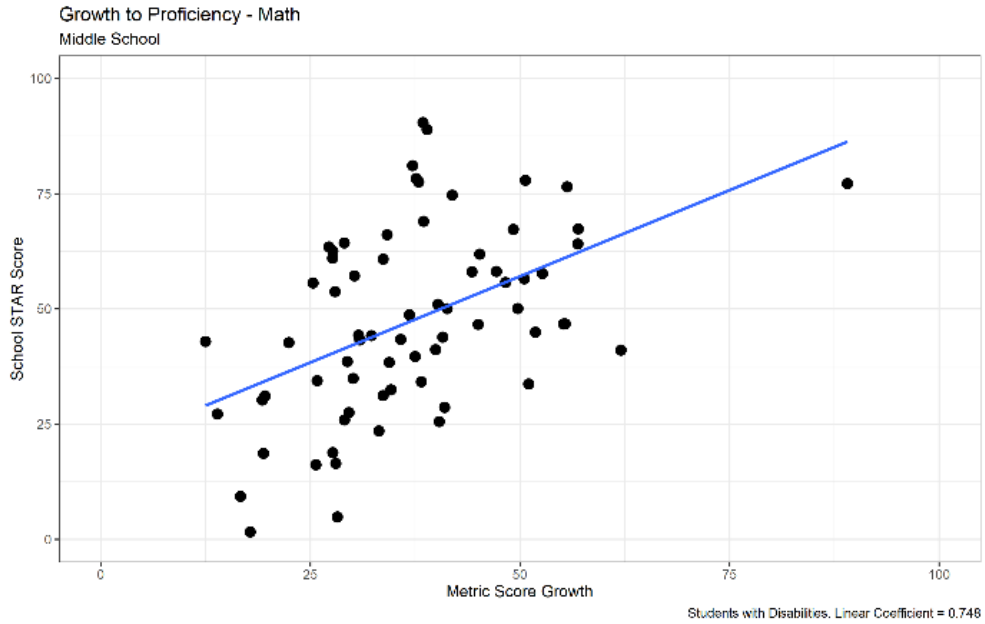


Figure 143

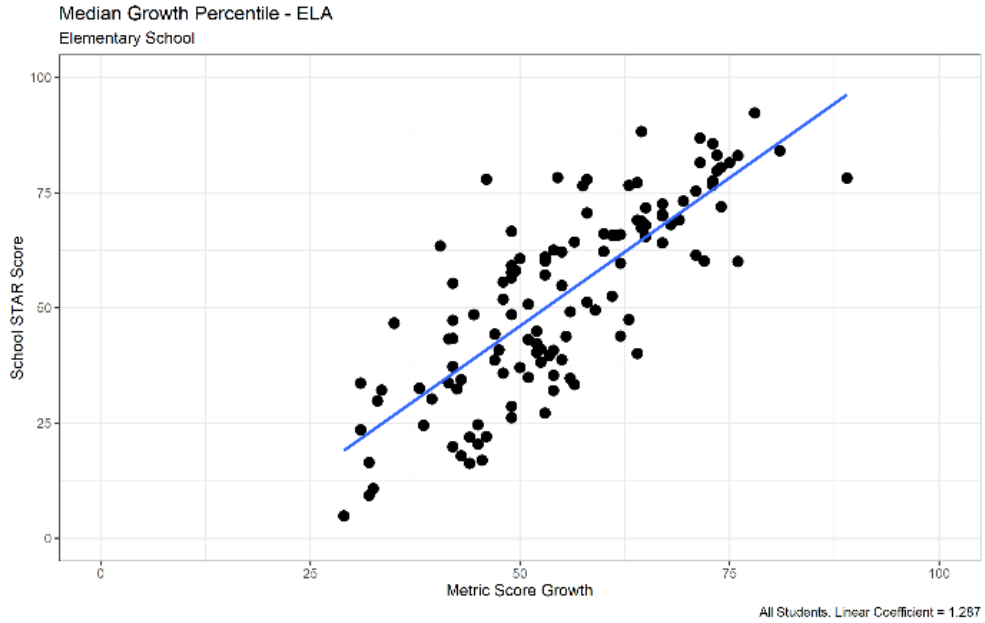


Figure 144

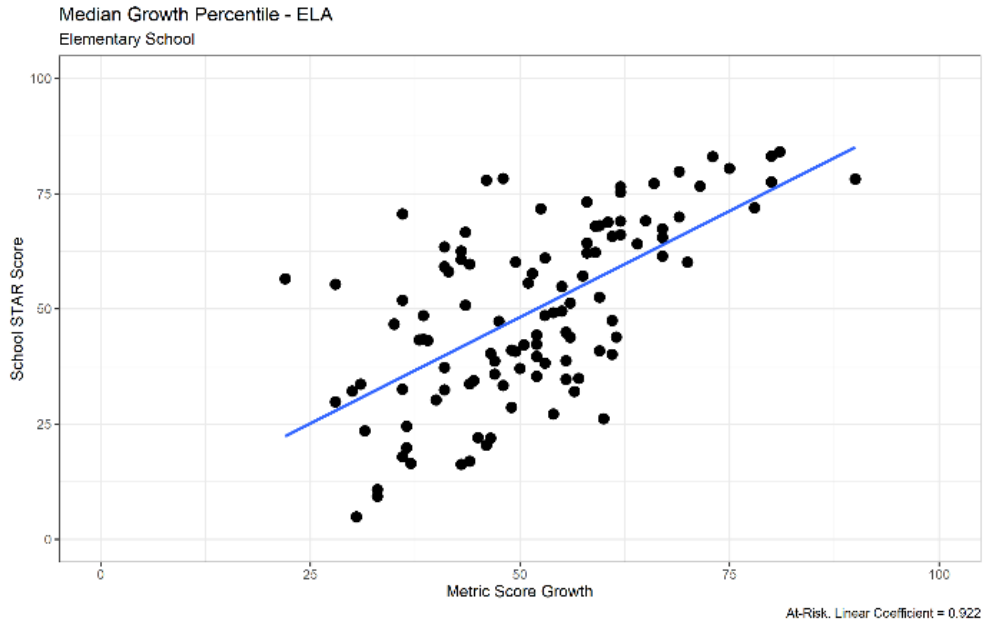


Figure 145

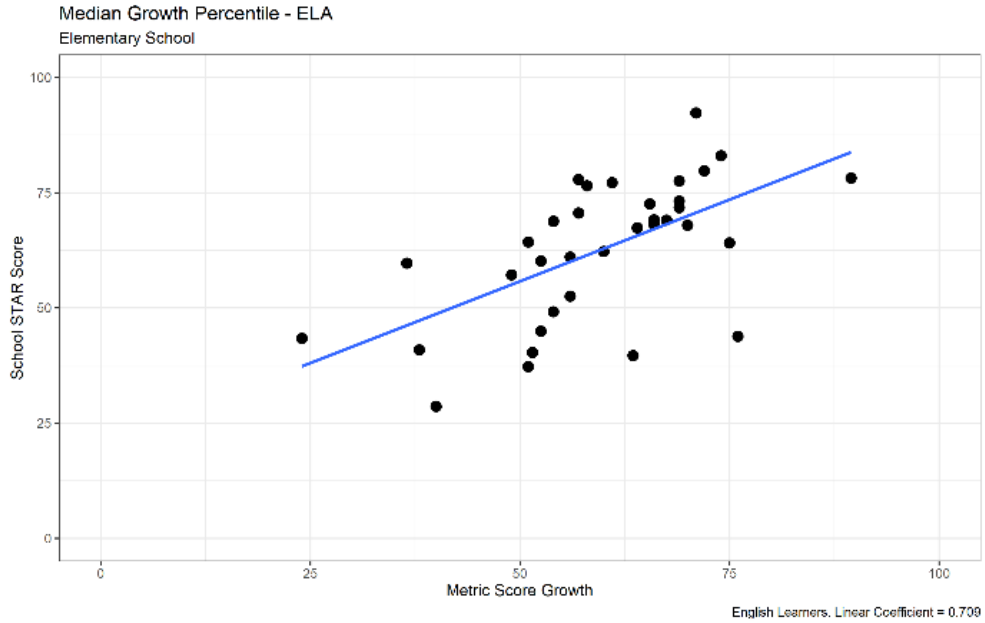


Figure 146

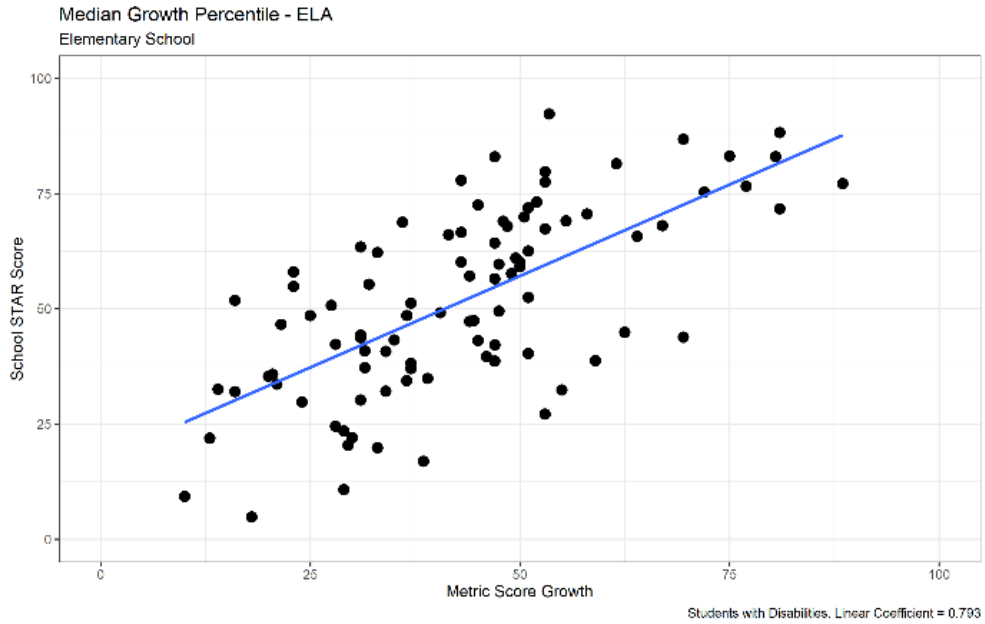


Figure 147

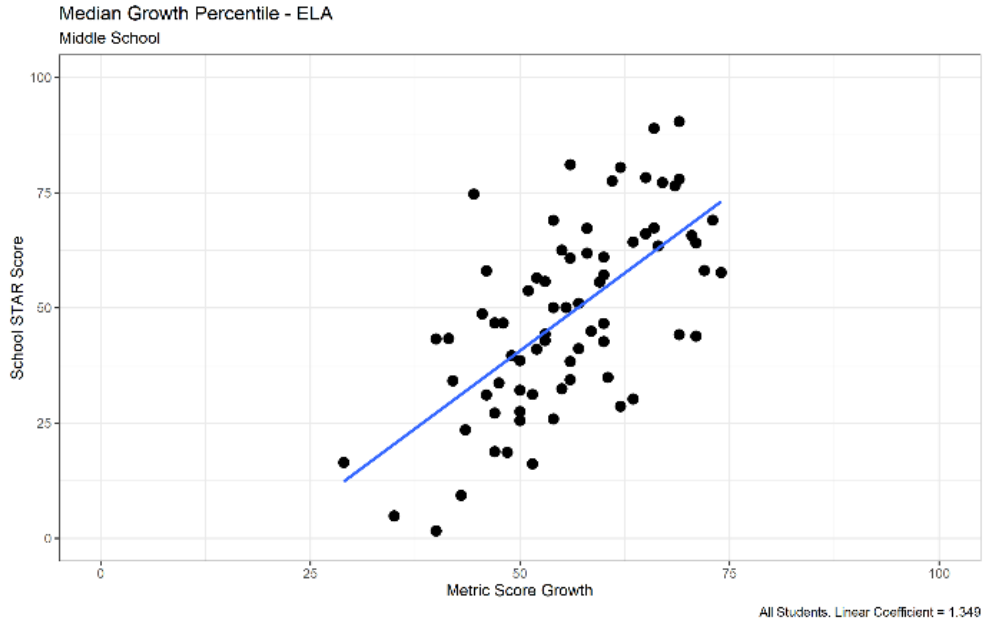


Figure 148

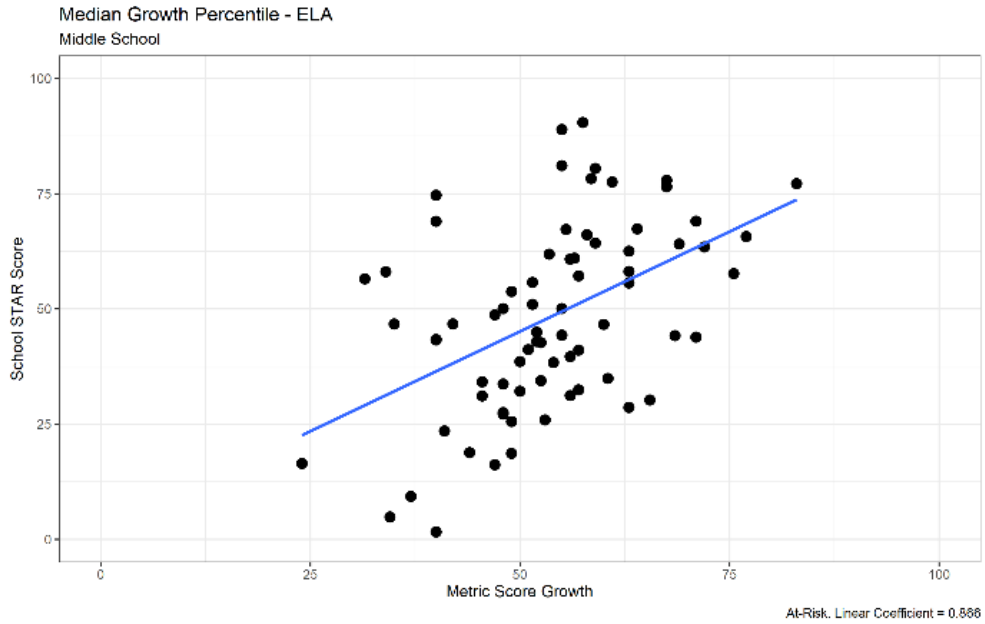


Figure 149

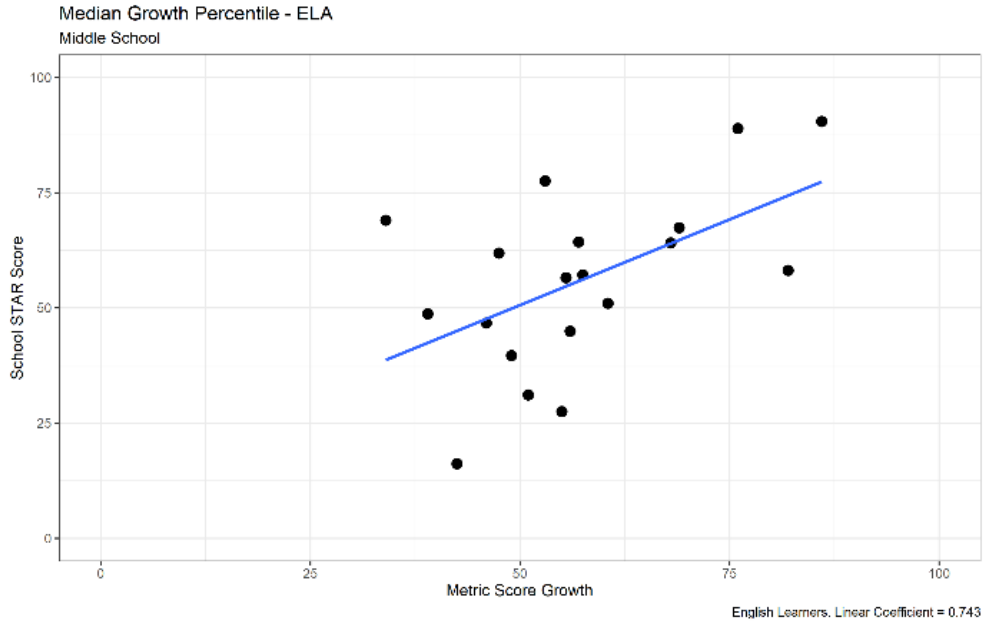


Figure 150

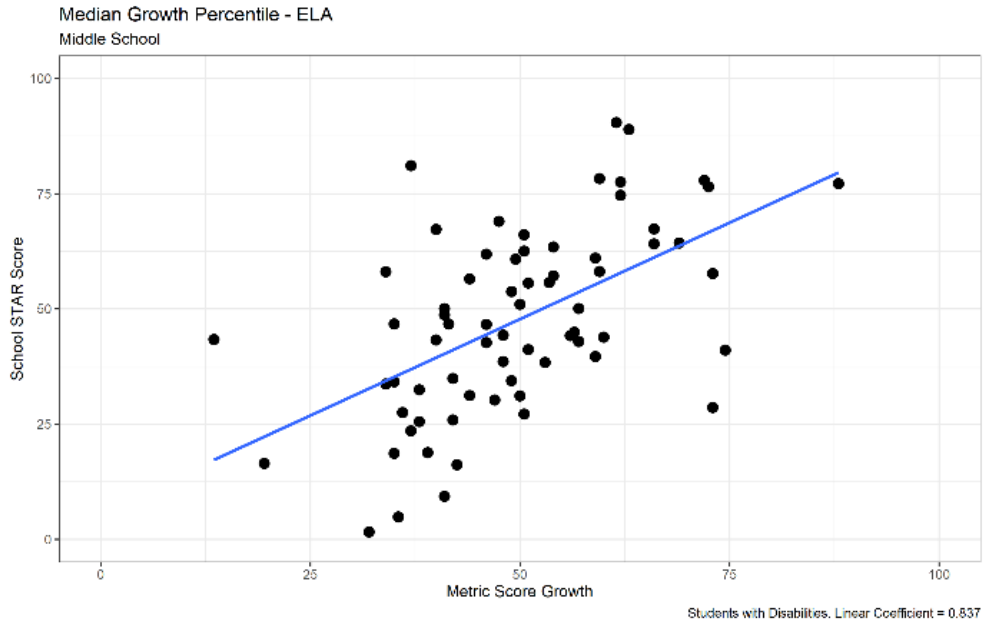


Figure 151

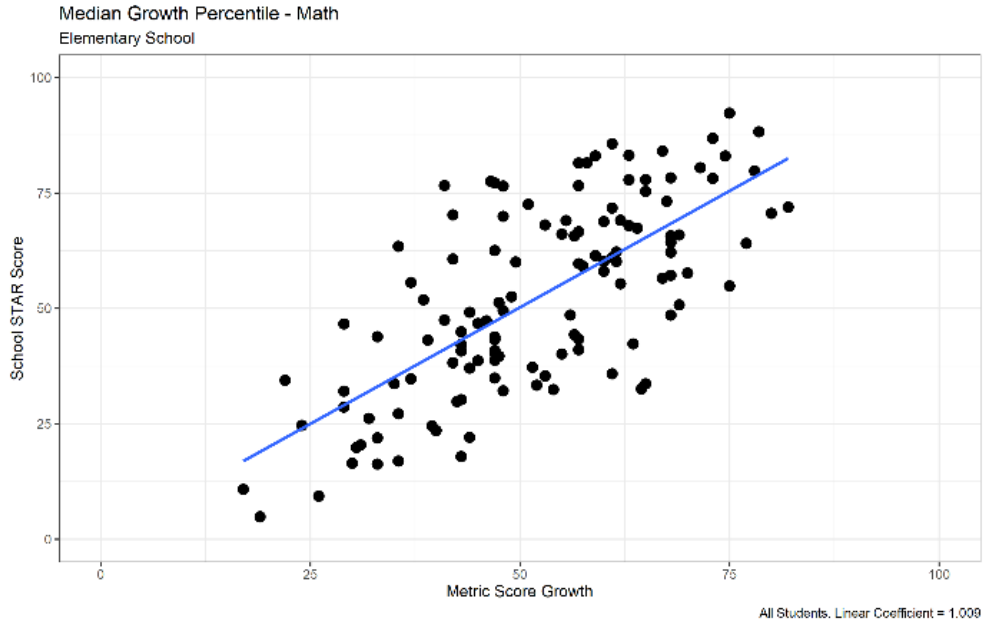


Figure 152

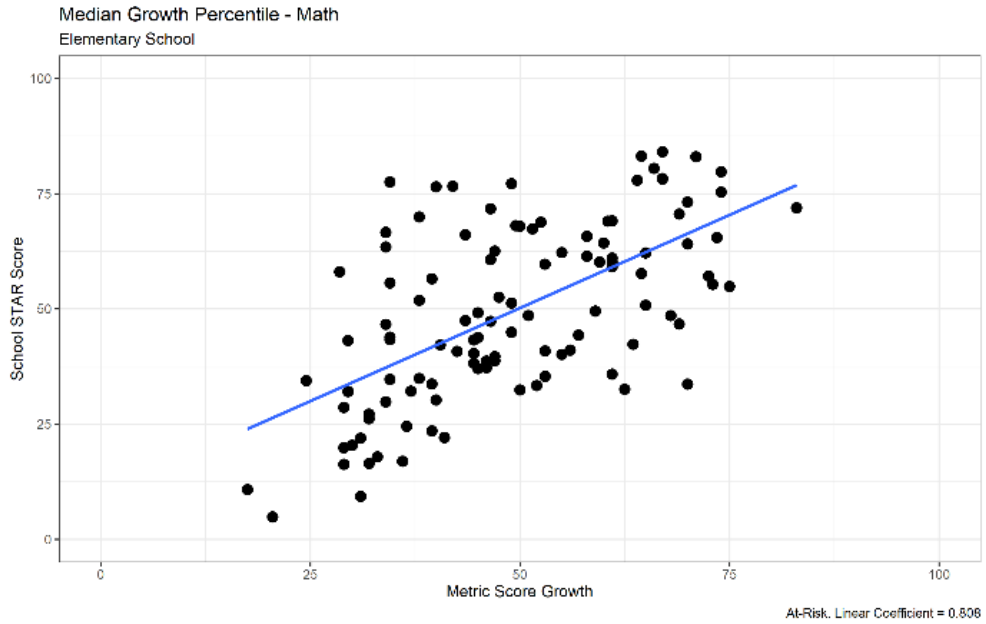


Figure 153

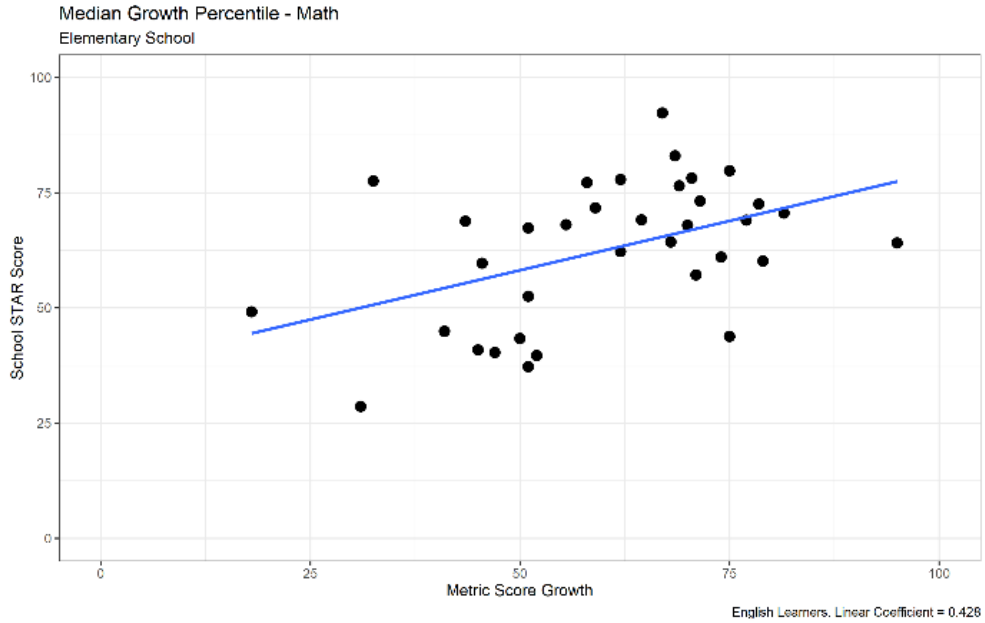


Figure 154

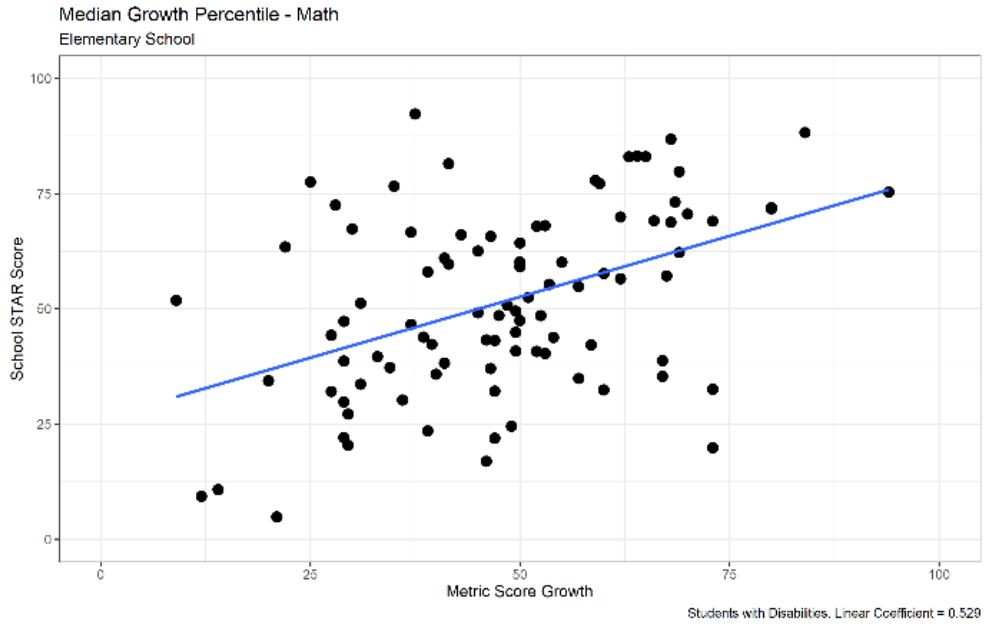


Figure 155

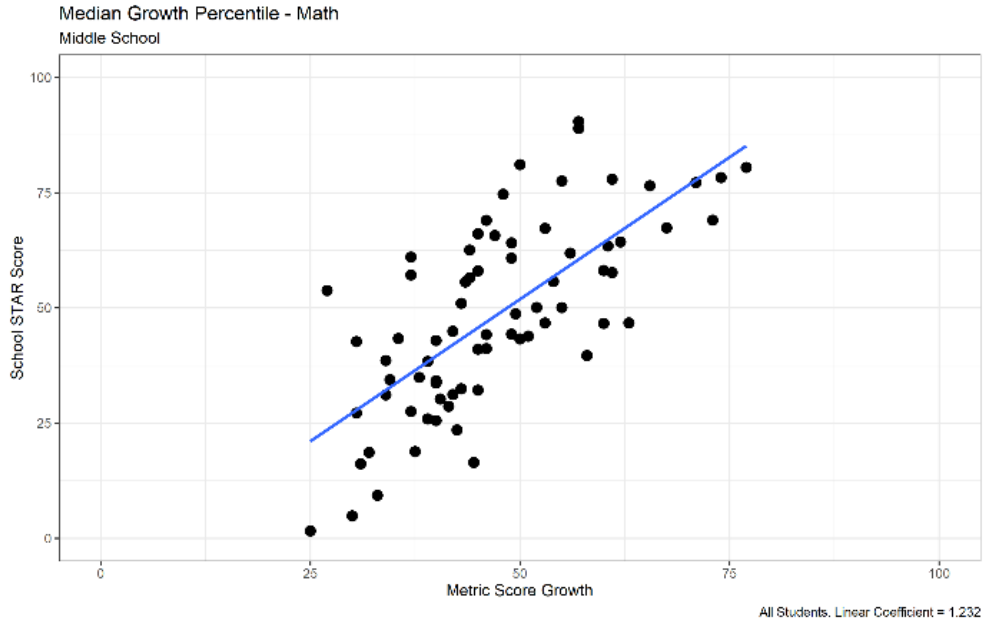


Figure 156

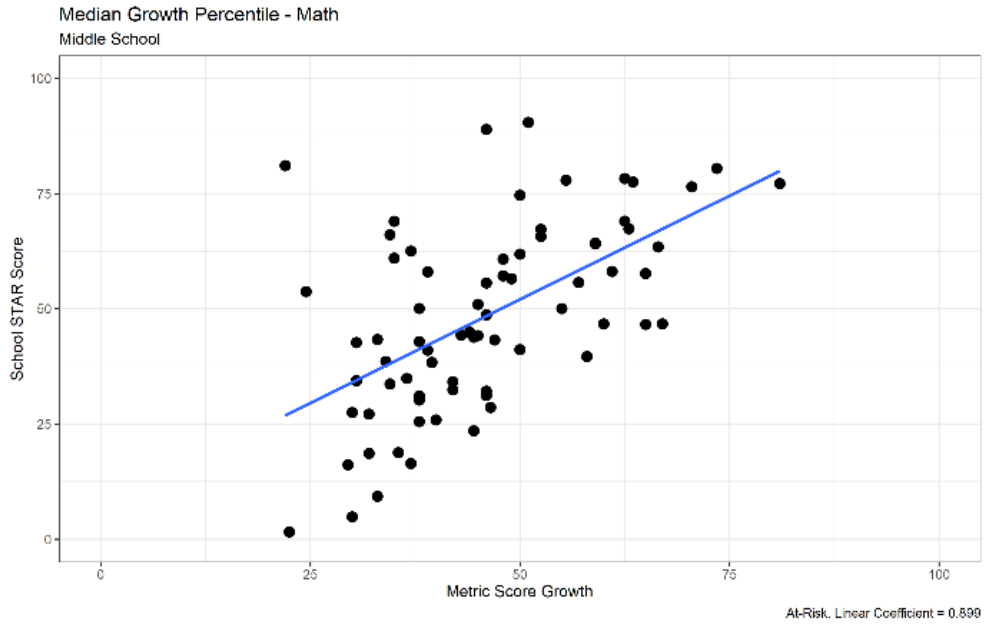


Figure 157

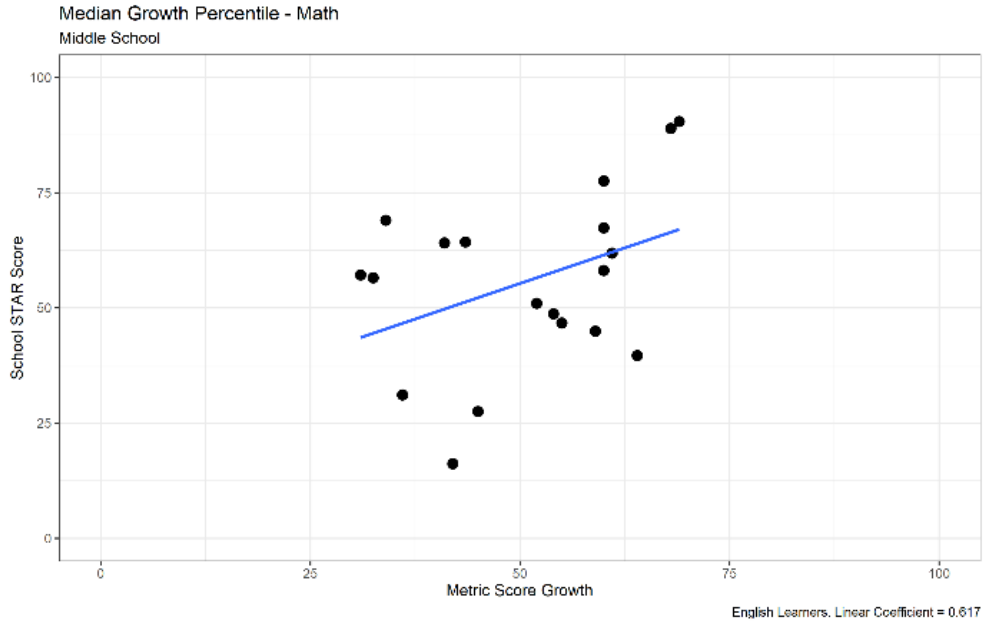
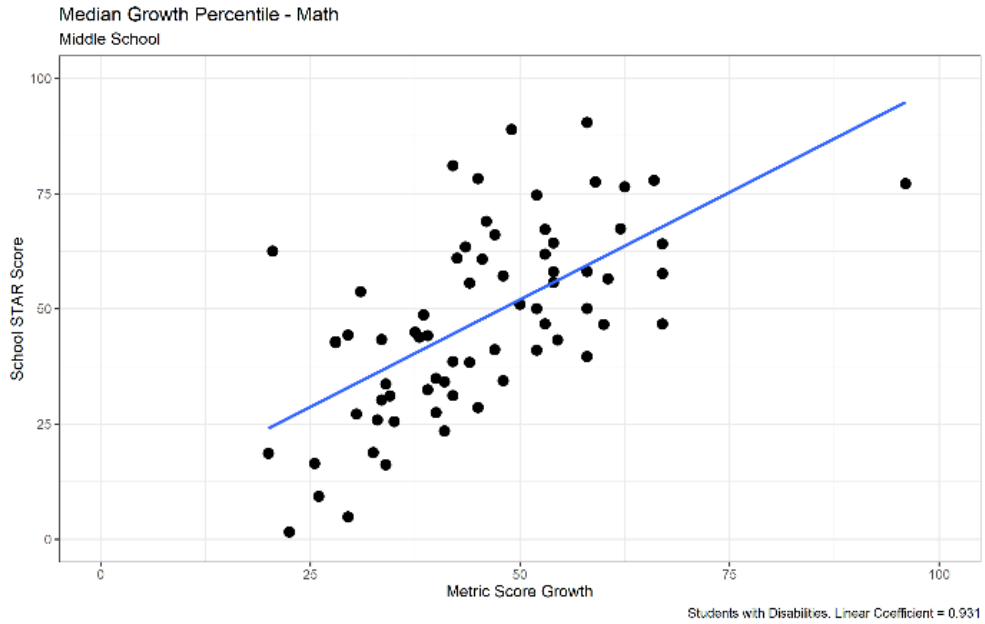


Figure 158



Scatter Plots and Linear Prediction of STAR Scores by Achievement Metric Scores, by Framework and Student Group

The figures in this section show the relationship between schools' performance on the ELA PARCC 4+/MSAA 3+ metric and STAR score, by framework and student group (student groups are listed in the bottom-right corner of each figure). Each plot point represents an individual school with a fitted line showing the general relationship between metric score and STAR score.

These analyses show a positive association between ELA metric scores and STAR scores for schools in each framework, with a greater level of variation in STAR scores observed in the elementary school and middle school frameworks at similar levels of performance on PARCC 4+/MSAA 3+, given the weight that achievement has compared to growth and the existence of other metrics in those frameworks, this is not unexpected. For the All Students student group, this effect is more pronounced at lower levels of performance. School-level PARCC 4+/MSAA 3+ performance among students who are at-risk, students with disabilities, and English learners exhibit much greater variation in STAR scores across levels of performance compared to the all students group, which also aligns with the wider variation of performance of those student groups in non-achievement metrics such as growth and attendance.

Figure 159

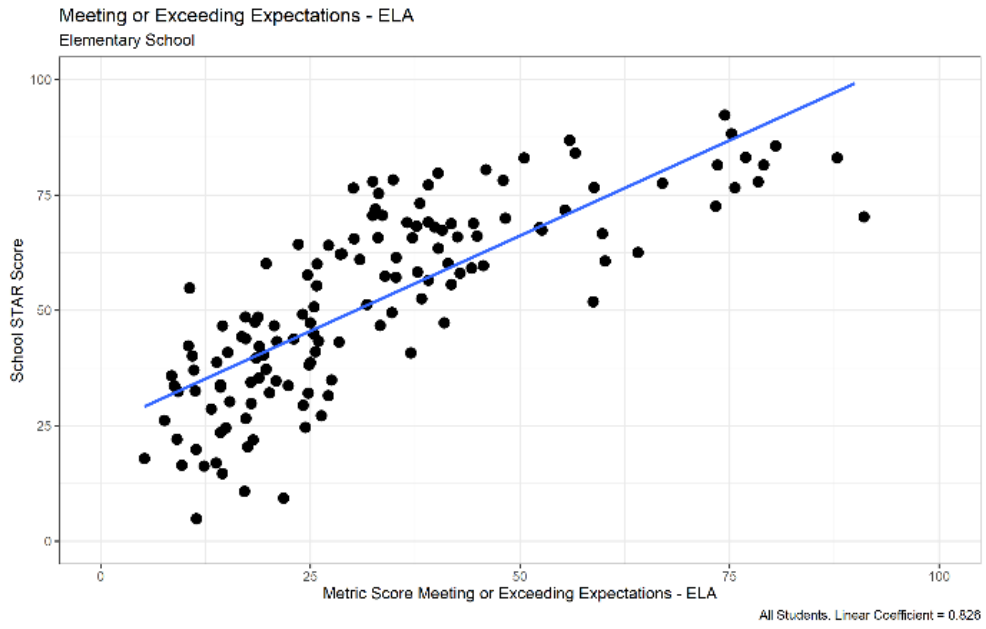


Figure 160

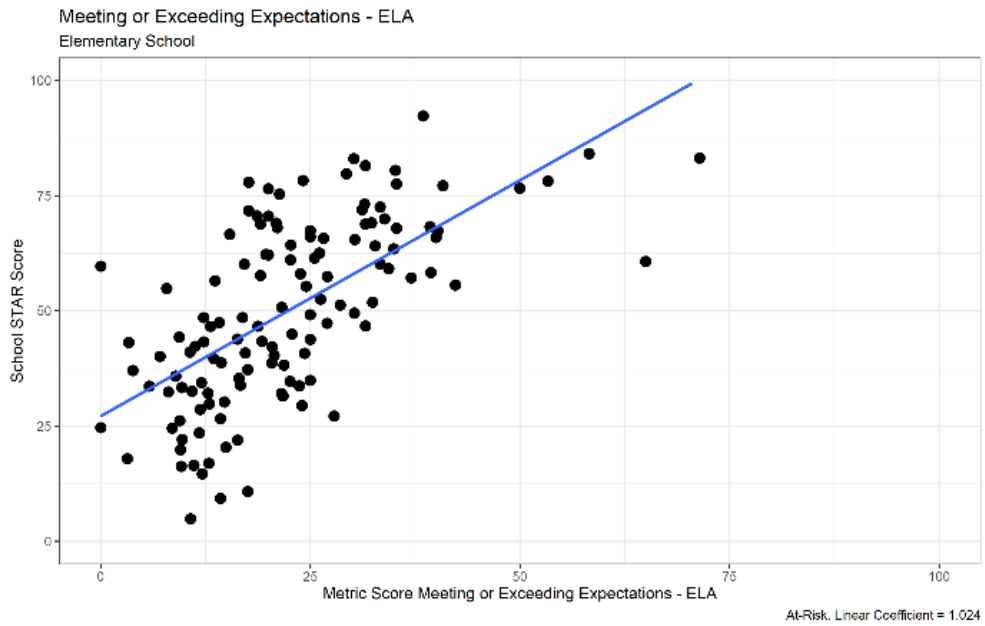


Figure 161

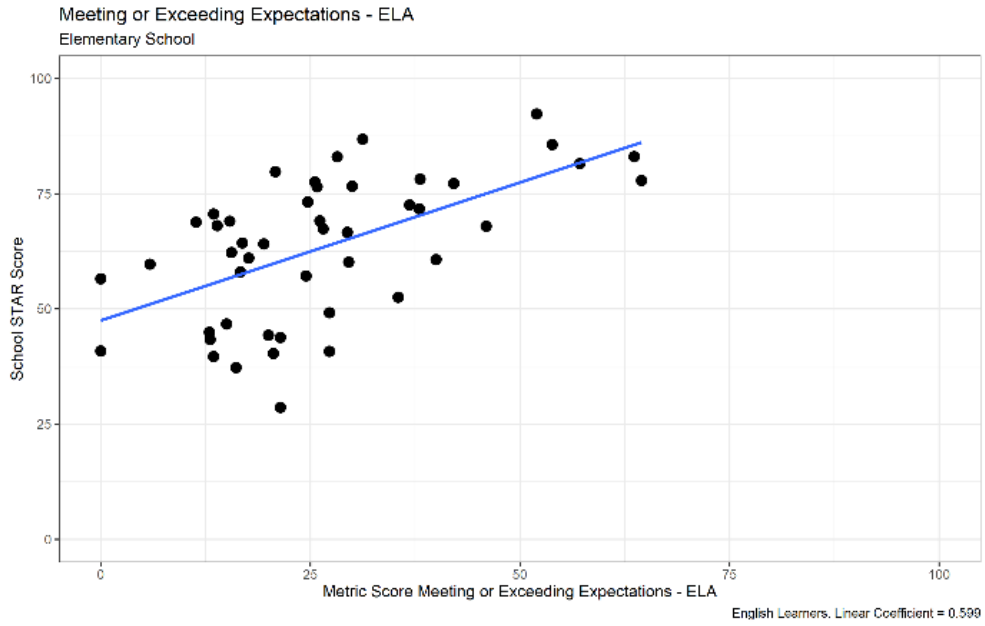


Figure 162

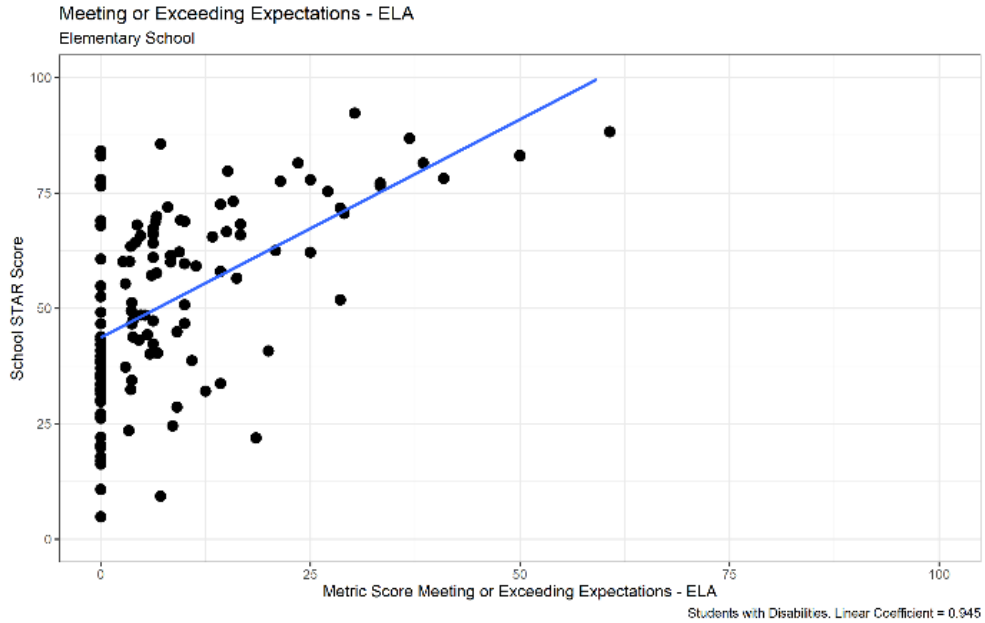

Meeting or Exceeding Expectations - ELA
Elementary School
School STAR Score
100
75
50
25
0
0
25
50
75
100
Metric Score Meeting or Exceeding Expectations - ELA
Students with Disabilities. Linear Coefficient = 0.945

Figure 163

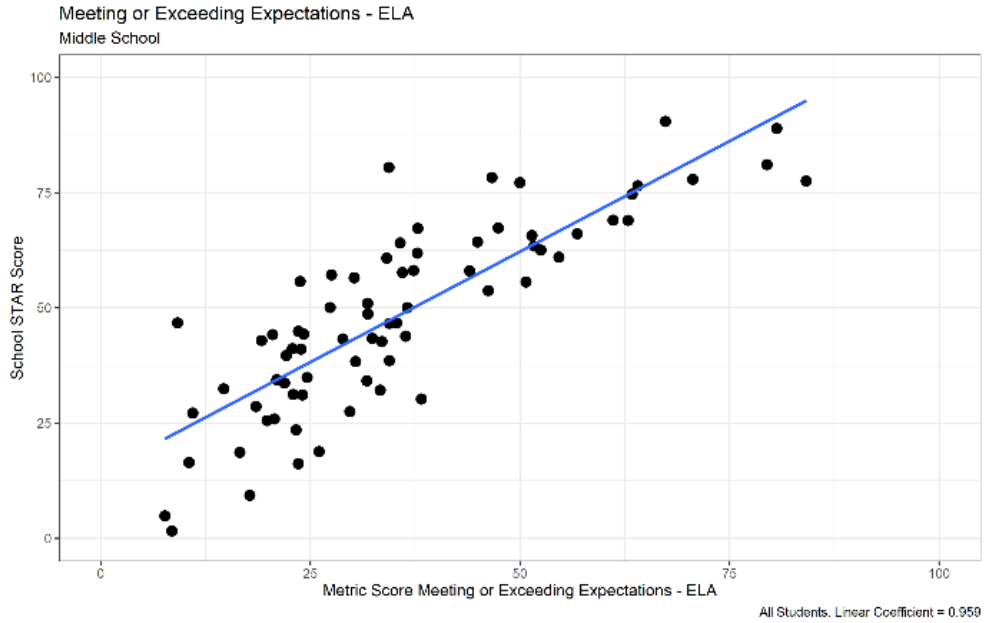


Figure 164

Figure 165

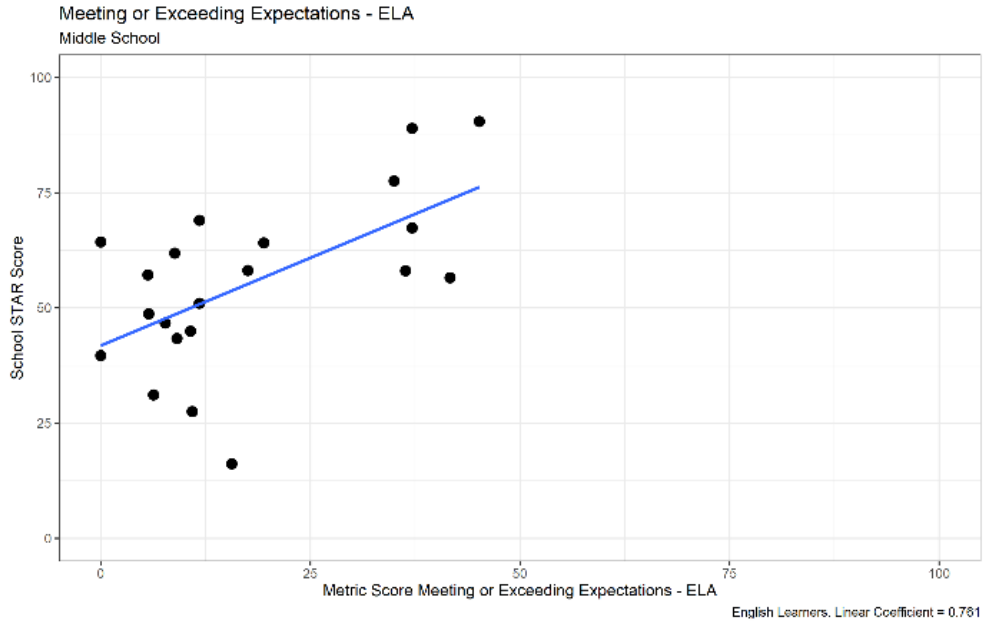


Figure 166

Figure 167

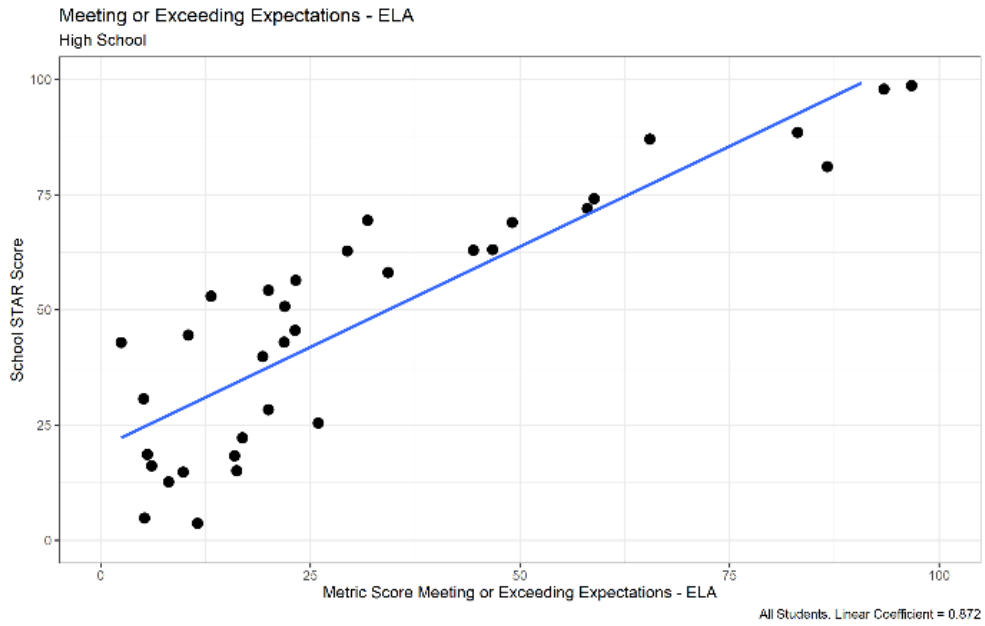


Figure 168

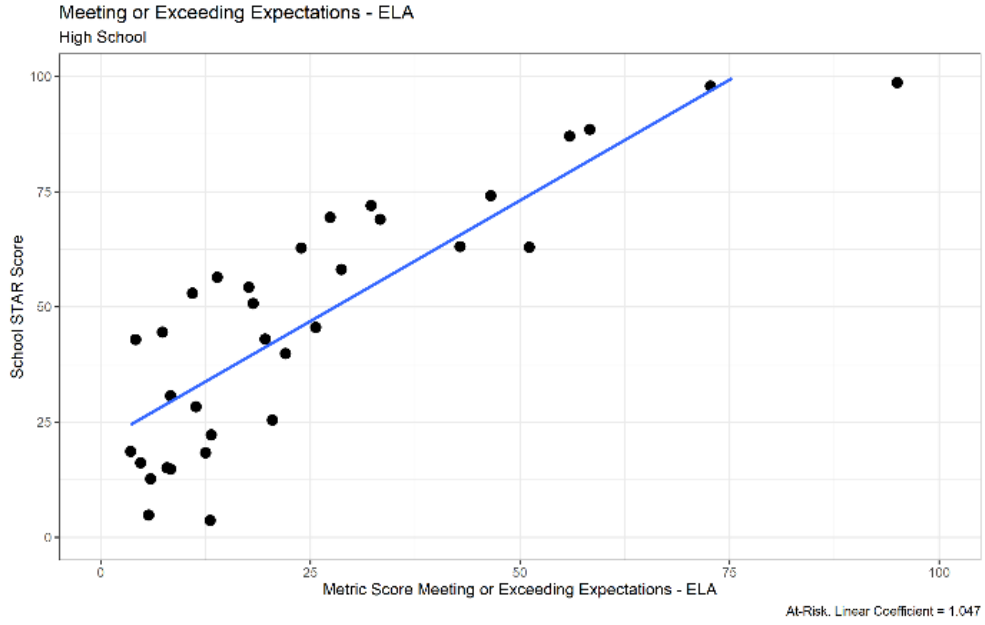


Figure 169

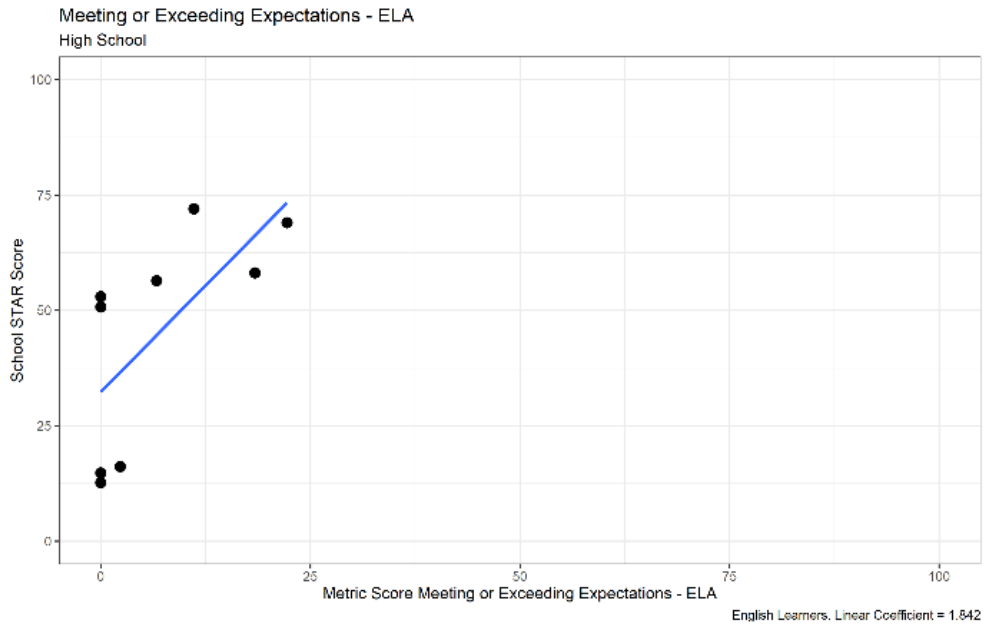


Figure 170

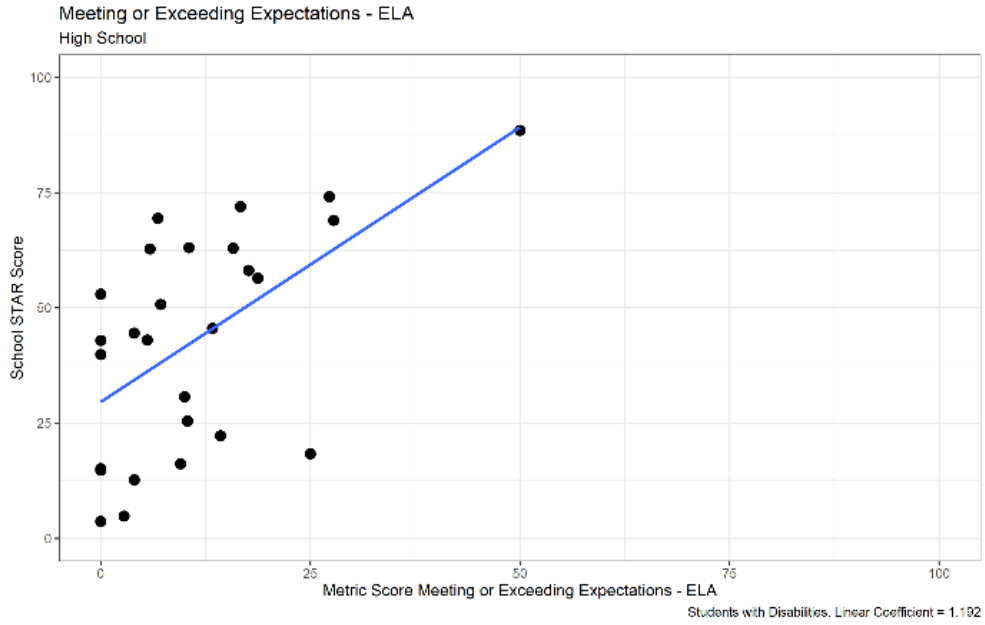


Figure 171

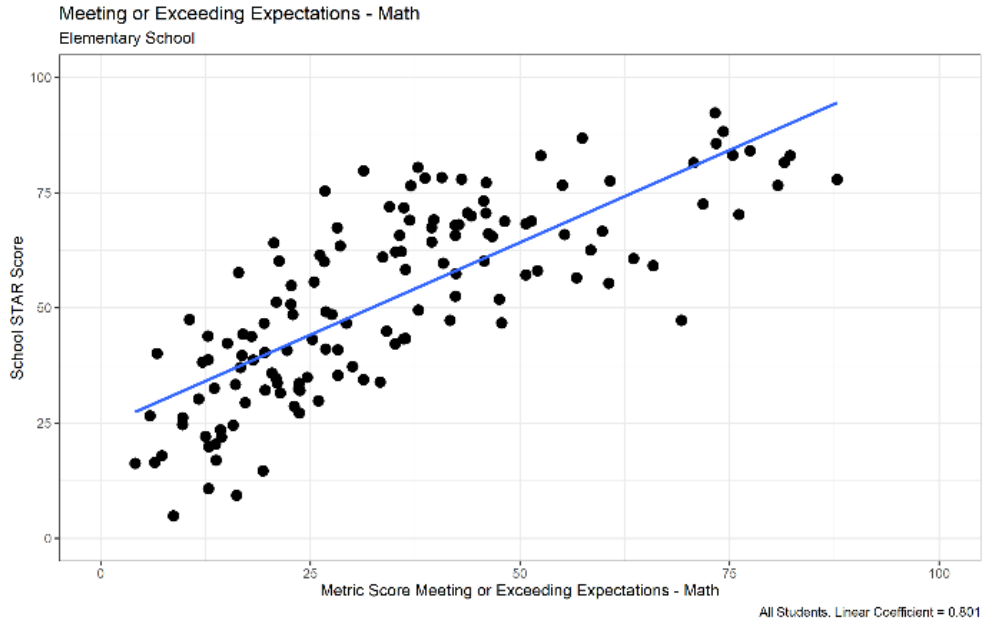


Figure 172

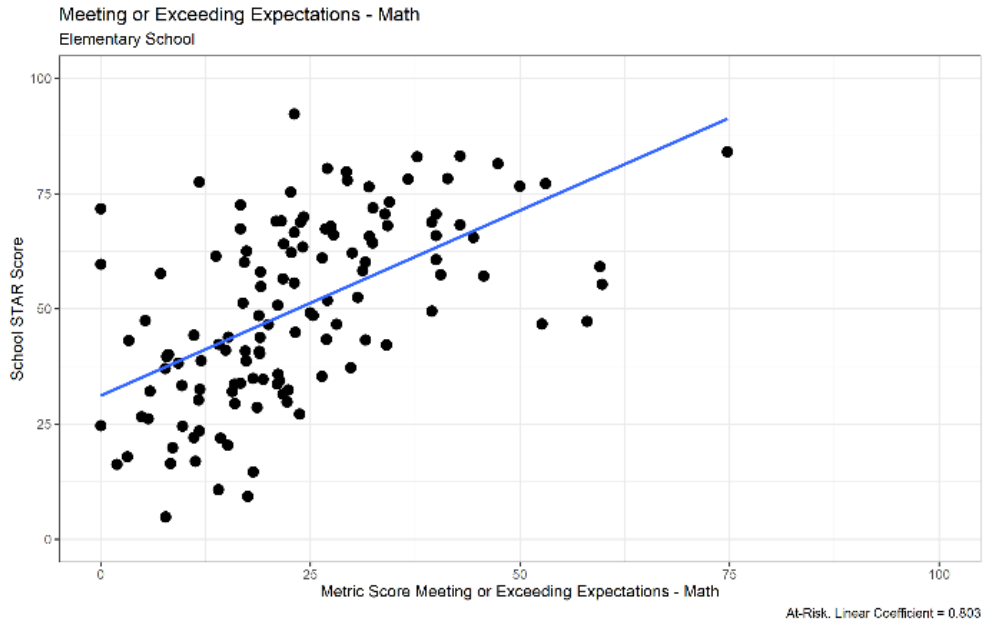


Figure 173

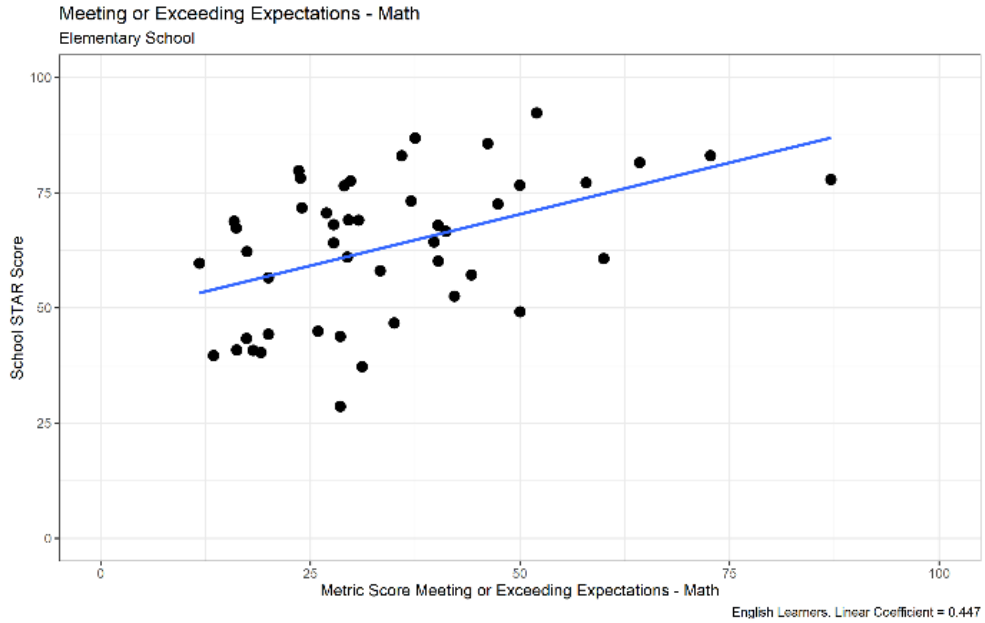


Figure 174

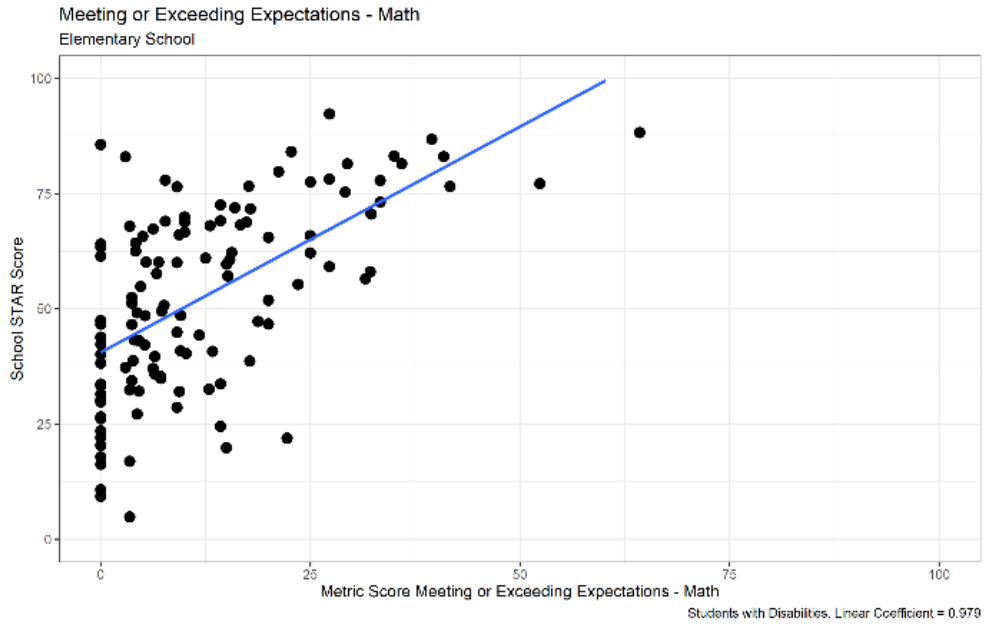


Figure 175

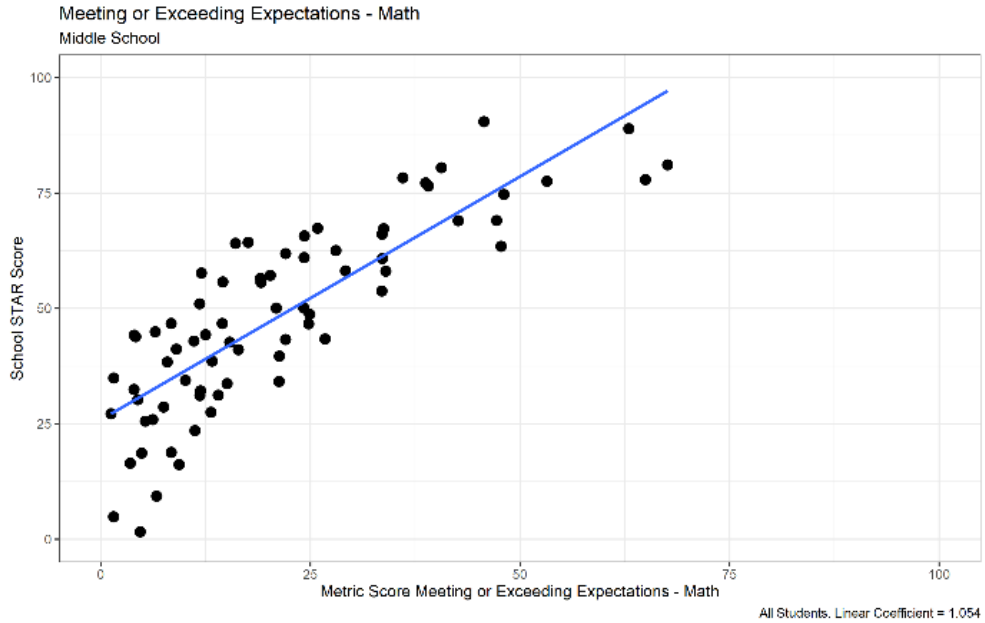


Figure 176

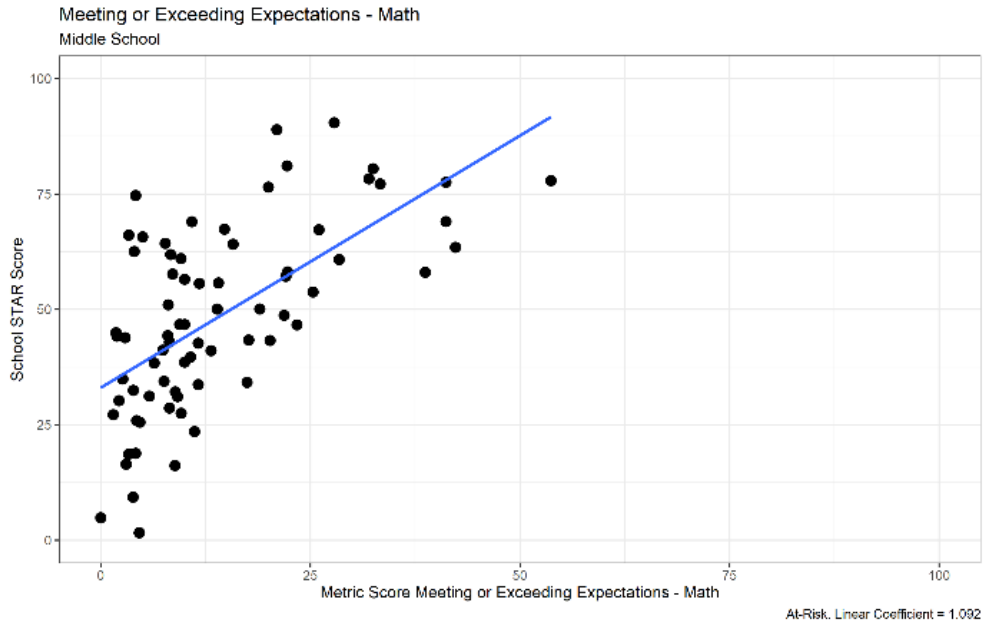


Figure 177

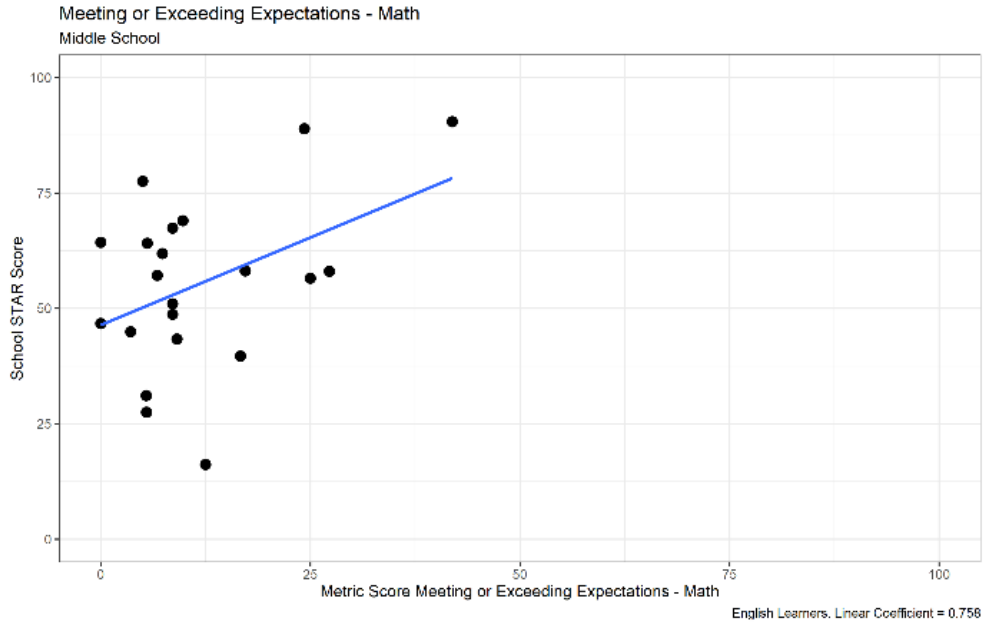


Figure 178

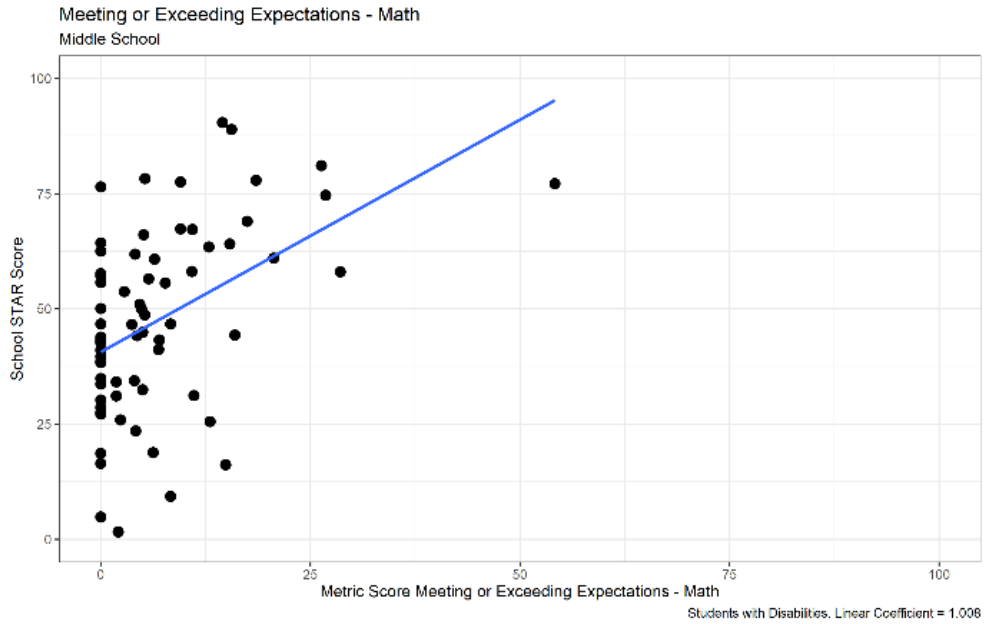


Figure 179

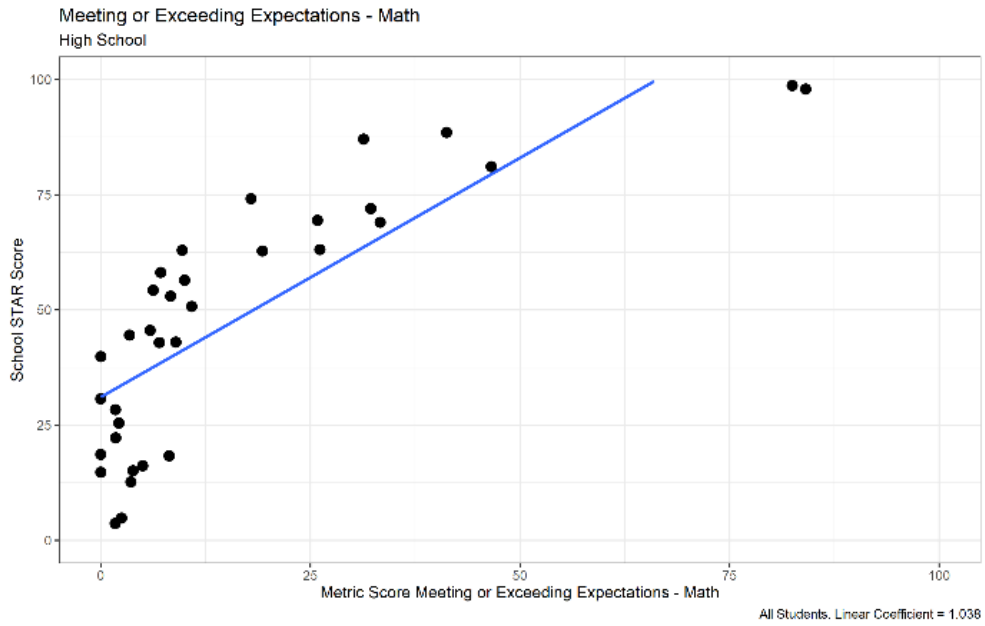


Figure 180

Figure 181

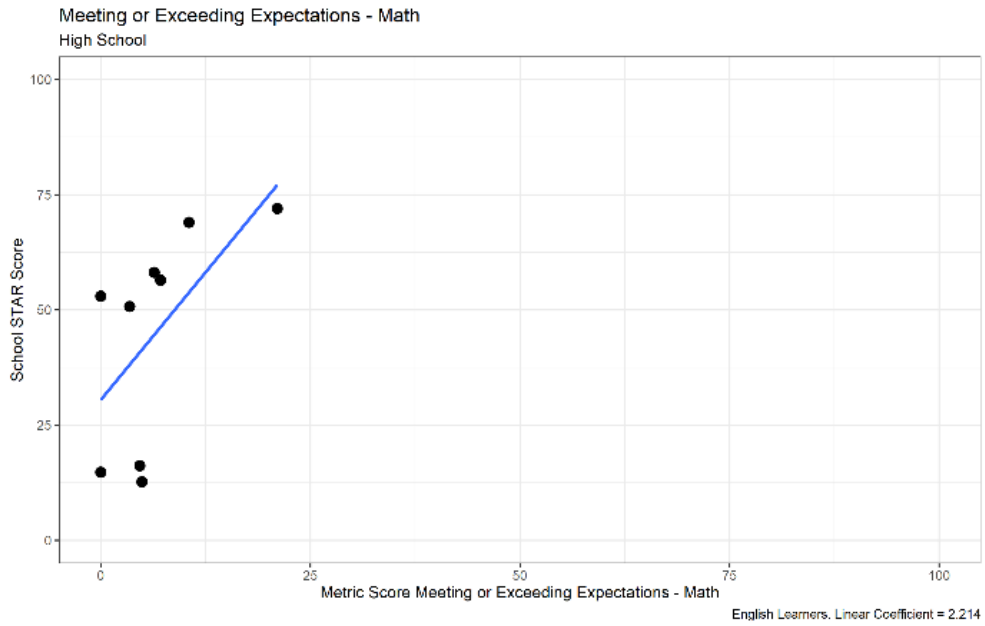
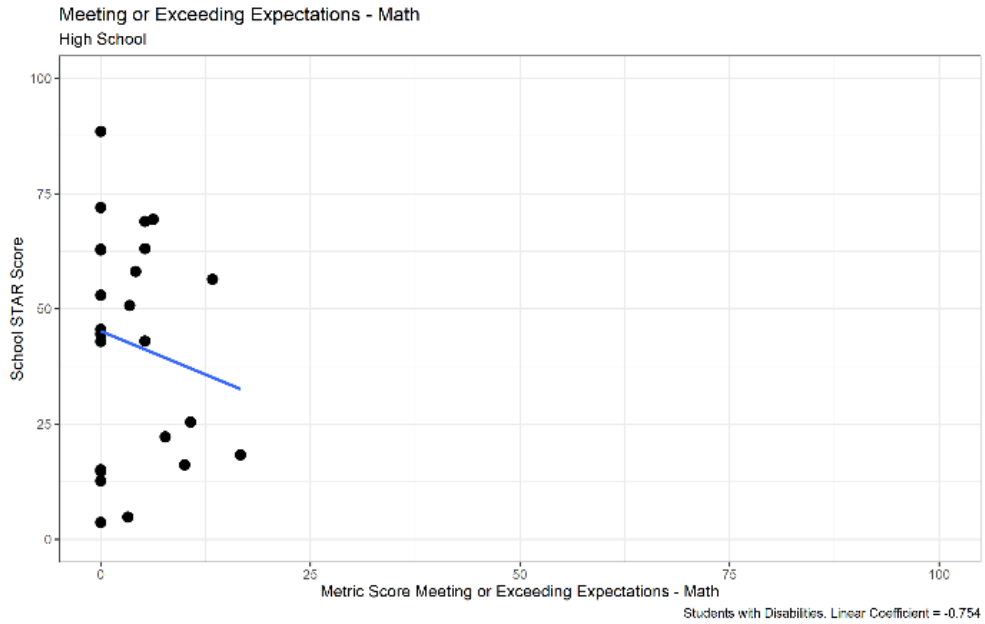


Figure 182



Appendix E - Exploration of Attendance Metrics

Addressing Chronic Absenteeism: 90 Percent Attendance and Attendance Growth

Figures 184 through 189 show the school-level relationship between Attendance Growth and 90% Attendance, the two measures that comprise the Addressing Chronic Absenteeism metric. Addressing Chronic Absenteeism offers schools a "best of" either 90% Attendance or Attendance Growth, rewarding schools who have consistently high attendance, as well as those schools who have made strides in improving their attendance. In the following charts, if a school is above the diagonal line, the school earned a greater percentage of points on 90% Attendance, while those below the line earned a greater share of points on Attendance Growth.

Most four and five-star schools earn a greater share of points in 90% Attendance, and the majority of schools earning a one-, two-, or three-star rating earn more points in Attendance Growth. There are a number of schools earning one and two-star ratings with 0 points earned on 90% attendance who were able to earn points on Attendance Growth.

Across all frameworks, the percentage of schools and student groups using each metric remained the same across the two years. When the student group at the school changed from using Attendance Growth to 90% Attendance or vice versa, there were differing reasons for the change. In some schools it was due to an increase in Attendance Growth, in others a reduction in Chronic Absenteeism, and in some cases, it was an increase in chronic absenteeism, so the metric that resulted in the higher metric points flipped (where the two metrics resulted in equal points it was a random selection for which one was used).

The number of schools in which the best score for chronic absenteeism in the all students group was 90% Attendance versus Attendance Growth fluctuated significantly. While the overall percentage of metric scores used from each of the chronic absenteeism metrics stayed consistent for the all students group, there was considerable movement of schools switching from 90% Attendance to Attendance Growth and from Attendance Growth to 90% Attendance. These changes balanced out to keep the split of use between the two metrics consistent. Schools that changed from 90% Attendance to Attendance Growth for the all students group tended to have lower 90% Attendance metric scores in 2017-18 than schools that changed in the opposite direction.

Figure 183

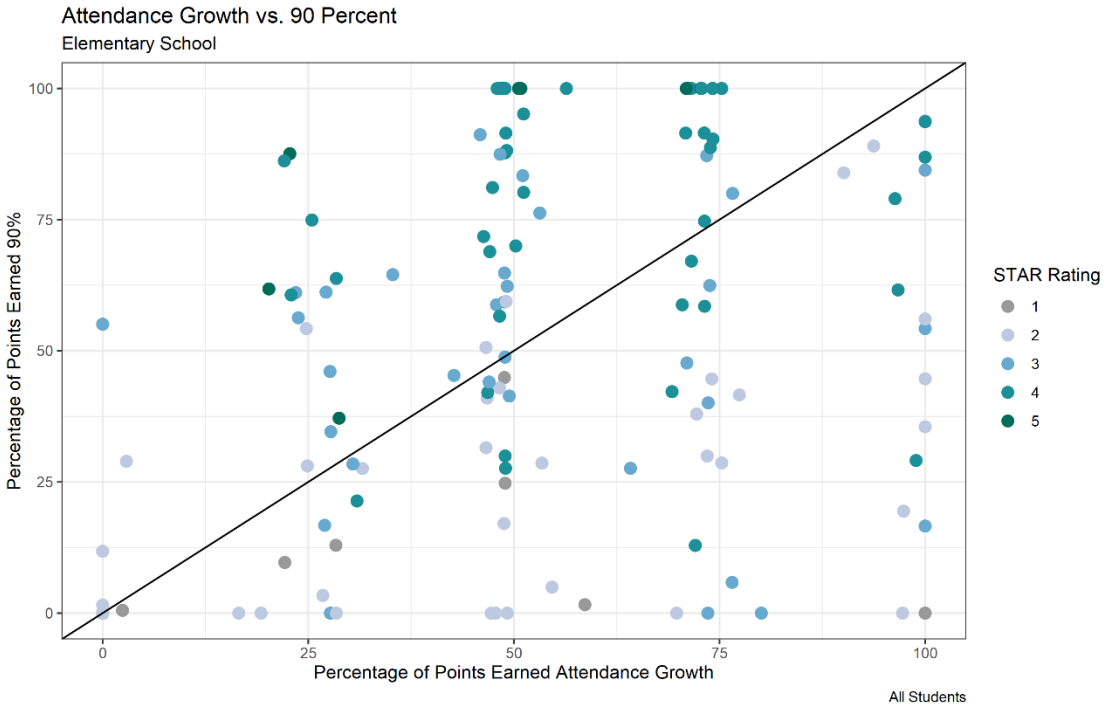


Figure 184

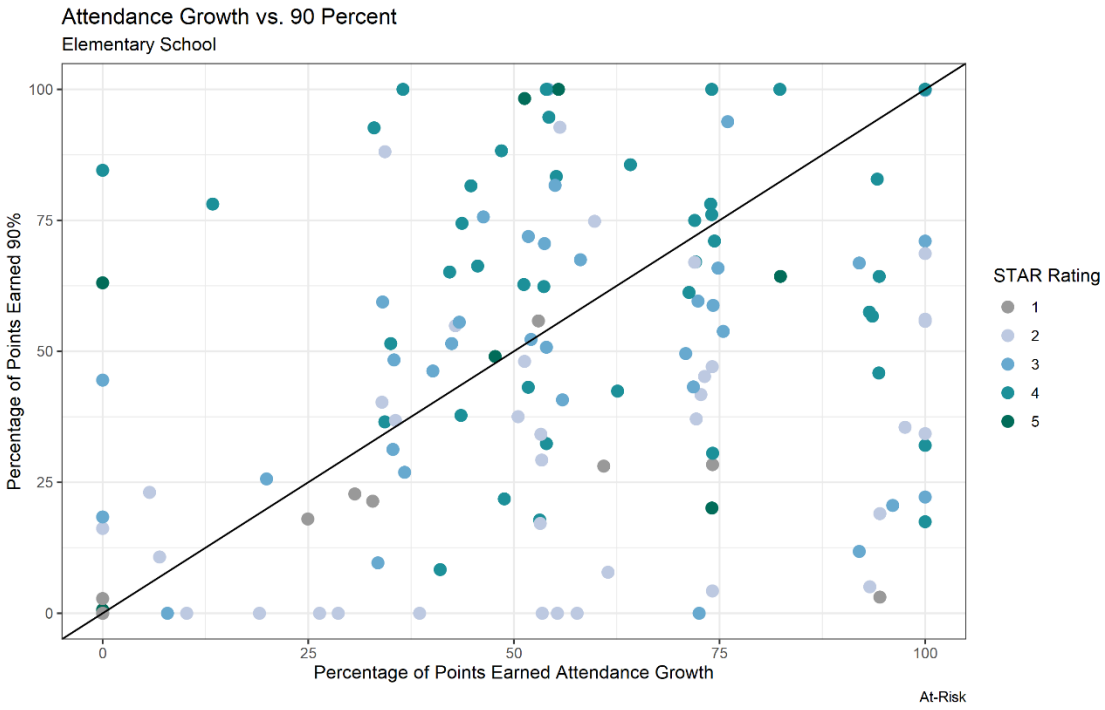


Figure 185

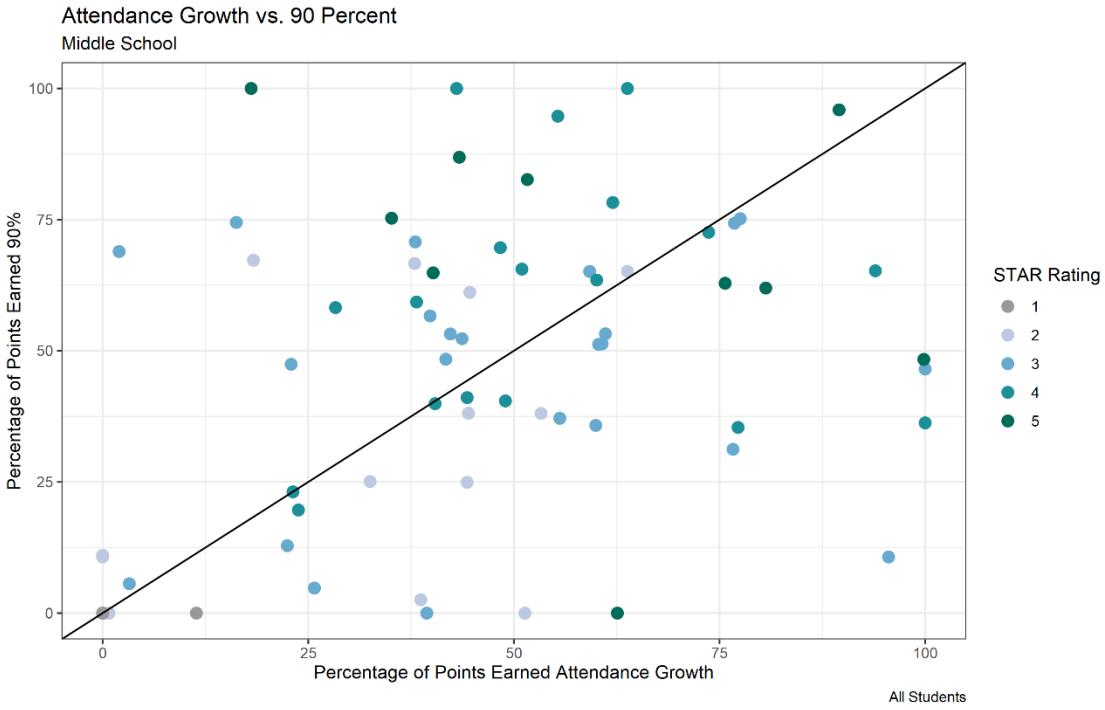


Figure 186

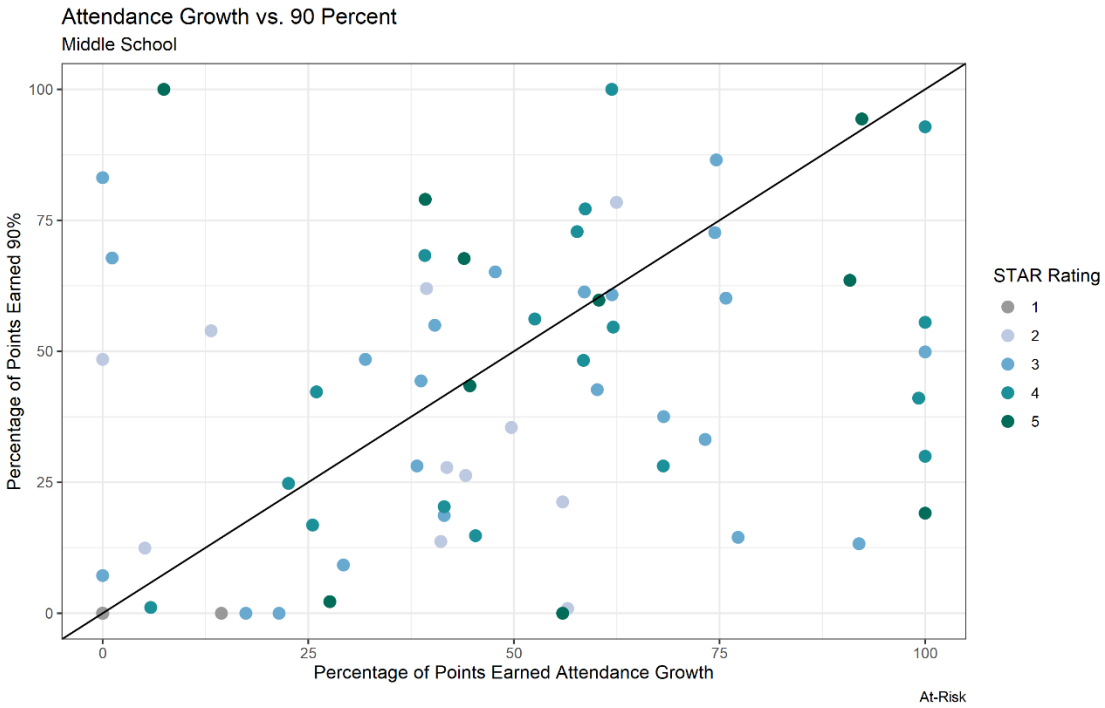


Figure 187

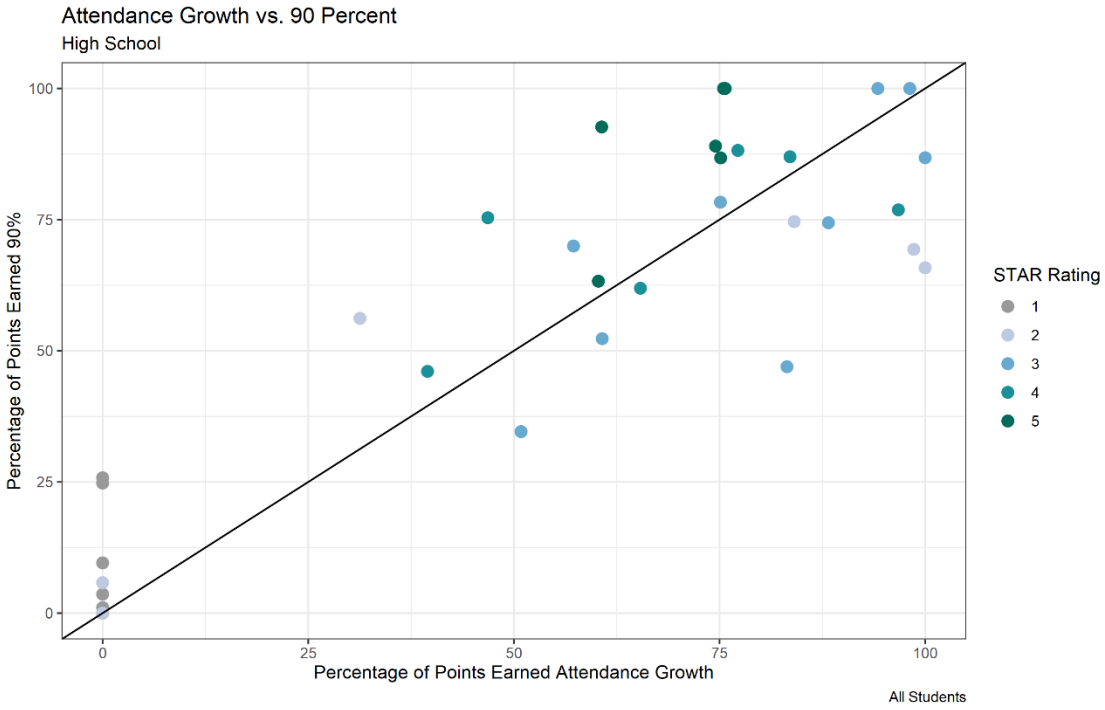


Figure 188