Analysis of Equity in Austin Independent School District
Update to the equity indices

Department of Research and Evaluation

AUSTIN INDEPENDENT SCHOOL DISTRICT
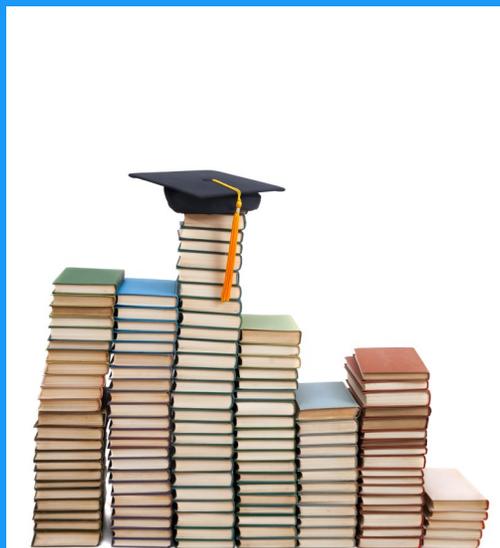
Executive Summary

The purpose of this report was to facilitate evaluation of equity issues in Austin Independent School District (AISD) schools using aggregate outcome measures (i.e., equity indices). The report presents data on equity in AISD, using an index of student performance, an index of the instructional services provided to students, and school per pupil expenditures.

Equity was also explored for each school level. Gaps in student performance were explored for each school by (a) economic disadvantage status, (b) student participation status in special education (SPED) programs, (c) student participation status in bilingual education (BE) or English as a second language (ESL) programs, and (d) race/ethnicity.

Appendix A summarizes development of the indices, including stakeholders' feedback about the measures included in the equity indices, and shows changes (current and proposed) to the indices from the 2014–2015, 2015–2016, and 2016–2017 school years. The current report presents data from the 2015–2016 school year.

Key Findings

Generally, schools receiving more instructional services for students had lower student performance than did schools receiving fewer instructional services, and schools with greater per pupil expenditures had lower student performance than did schools with lower per pupil expenditures. However, not all schools followed these patterns (e.g., some schools beat the correlations).

Seven elementary schools had greater-than-average instructional service index scores and greater-than-average school performance index scores: Blanton, Ortega, Ridgetop, Wooten, Graham, Blazier, and Guerrero-Thompson. Six elementary schools had greater-than-average per pupil expenditures and greater-than-average school performance index scores: Blackshear, Blanton, Maplewood, Ortega, Pease, and Ridgetop. Only one middle school (i.e., Bedichek) had greater-than-average instructional service index scores and greater-than-average school performance index scores. Only one middle school (i.e., Covington) also had greater-than-average per pupil expenditures and greater-than-average school performance index scores. No high schools beat the correlations.

Gap analyses revealed differences in scores on the school performance index within:

- Elementary school student groups defined by economic disadvantage status and receipt of SPED services
- Middle school student groups defined by economic disadvantage status, receipt of SPED services, and participation in BE or ESL programs
- High school student groups defined by participation in BE or ESL programs

Across all school levels, the Asian and White student groups did not differ significantly on performance on the school performance index, but both of these groups significantly differed from Hispanic and African American student groups.

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Introduction

This report describes equity in Austin Independent School District (AISD) using aggregate measures of student performance and the instructional services provided to students, in addition to school per pupil expenditures. Equity was explored for each school level. Gaps in student performance were displayed for each school by (a) economic disadvantage status, (b) student participation status in special education (SPED) programs, (c) student participation status in bilingual education (BE) or English as a second language (ESL) programs, and (d) race/ethnicity.

Generally, schools receiving more instructional services for students were associated with lower student performance than were schools receiving fewer instructional services for students; schools receiving more instructional services for students were associated with greater per pupil expenditures than were schools receiving fewer instructional services for students; and schools with greater per pupil expenditures were associated with lower student performance than were schools with lower per pupil expenditures (see Appendix B for the analysis summary). However, not all schools followed these patterns. Data are graphed to highlight instances where individual schools diverged from overall statistical associations.

Purpose

When evaluating schools for gaps between student groups, numerous individual outcome measures can be examined (e.g., Hutchins, Looby, & Reach, 2016; Schmitt, Williams, & Christian, 2016). The purpose of this report was to facilitate evaluation of equity issues in AISD schools using aggregate outcome measures.

Background

In response to a superintendent's request, during the 2015–2016 school year, AISD began developing two aggregate outcome measures (i.e., a school performance index and an instructional services index) for use in evaluating equity gaps in AISD schools (Schmitt, 2016a). The school performance index reflected student performance across multiple measures specific to the school level (i.e., elementary, middle, or high). It was computed for each school and each student group within the school. The instructional services index reflected the percentage of students who were economically disadvantaged, participated in BE or ESL programs, or received SPED services at each school.

Subsequent to publication of DRE #15.37 (Schmitt, 2016a), AISD presented the report to several district stakeholder groups and explained the findings and methods. Stakeholders were then surveyed and asked for feedback about the preferred indicators to be used in future school performance index computations (Schmitt, 2016b). Survey results were analyzed, a range of recommended indicators was identified, and a focus group was conducted with a representative group of school principals to gather input on the final set of recommended indicators for each level. The recommended school performance index indicators are presented for each level and school year (2014–2015 through 2016–2017) in Appendix A.

The work described in the current report took place within a larger context of ongoing equity research in AISD in 2015–2016 through 2016–2017. In 2015–2016, AISD began a focused evaluation of gaps between student populations in the district (e.g., Schmitt, 2016a). AISD further undertook a district equity self-assessment to identify district equity issues and barriers and to develop a responsive plan of action to address the equity gaps identified in the district (Hutchins, Looby, & Reach, 2016; Hutchins, Looby, & Schmitt, 2016; Schmitt & Hutchins, 2016).

How is equity explored in this report?

A School Performance Index reflects student performance across multiple measures. It is computed for each school and each student group within the school.

An Instructional Services Index reflects the percentage of students who are economically disadvantaged, receive bilingual or English as a second language services, or receive special education services.

Total per pupil expenditures also are displayed for each school.

Results are shown by school level.

Elementary schools

Middle schools

High schools

Analysis of Equity in AISD Elementary Schools

Elementary School Performance Index in 2015–2016, by Instructional Services Provided

Generally, in AISD elementary schools, higher instructional service index scores were associated with lower school performance index scores and higher per pupil expenditures. Two types of noteworthy exceptions to the overall elementary school trends include elementary schools with:

1. Greater-than-average instructional service index scores coinciding with greater-than-average school performance index scores (i.e., schools in the upper-right-hand quadrant of Figure 1); these schools serve student populations in need of the most instructional services, but are performing above average academically in the district

2. Greater-than-average per pupil expenditures coinciding with greater-than-average school performance index scores (i.e., some gray and all light and dark blue colored data points above the y axis reference line of Figure 1); these schools have the greatest expenses per student based on need, but are performing above average academically in the district

Elementary schools are displayed in Figure 1 according to their 2016–2017 instructional services index, their 2015–2016 school performance index, and their 2014–2015 actual per pupil expenditures. The means of the elementary schools' 2015–2016 instructional services index and 2015–2016 school performance index are shown as Y and X axis reference lines, respectively.

The 2016–2017 elementary school instructional services index equals the mean of (a) the percentage of students economically disadvantaged, (b) the percentage of students served with BE or ESL programs, and (c) the percentage of students served with SPED services.

The 2015–2016 elementary school performance index equals the mean of (a) the 2015–2016 State of Texas Assessment of Academic Readiness (STAAR) passing rate across all tests, (b) the 2015–2016 percentage of students not disciplined, (c) the 2015–2016 average daily attendance rate, (d) the 2015–2016 percentage of students on grade level in the Texas Primary Reading Inventory (TPRI) or Tejas Lee end-of-year assessment (if both TPRI and Tejas Lee, the better of the two outcomes was included).

Figure 1.

Plot of the 2015–2016 Instructional Services Index, by the 2015–2016 School Performance Index and by the 2014–2015 Actual per Pupil Expenditures for Elementary Schools in AISD
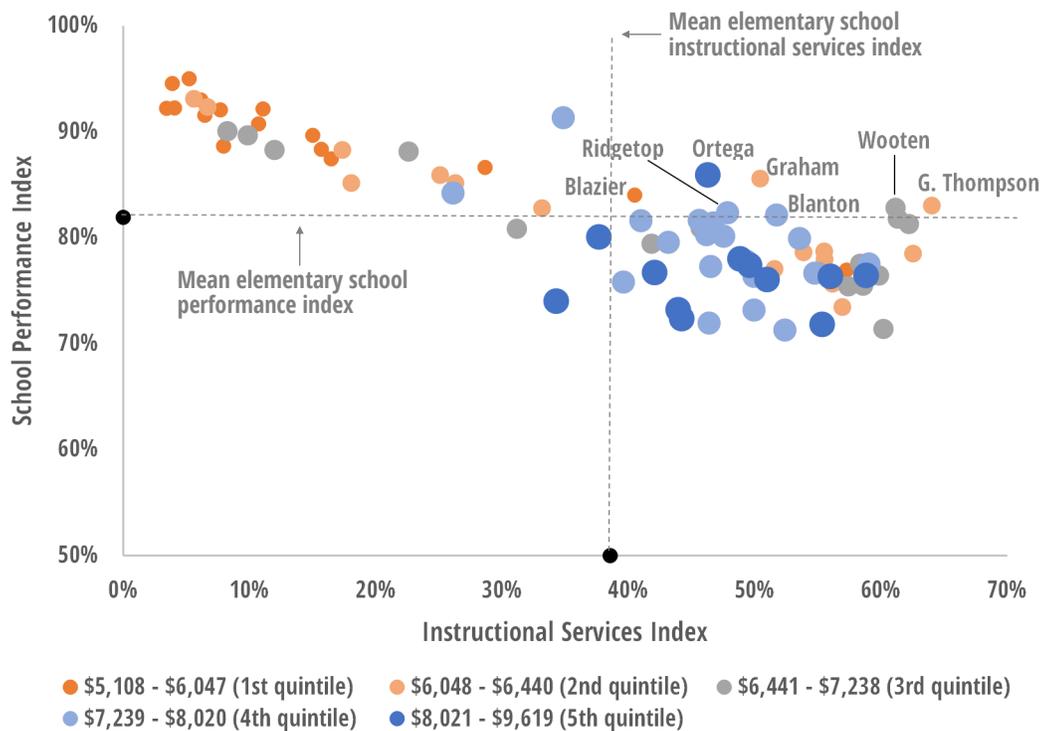
Source. 2016–2017 elementary school instructional services index, 2015–2016 elementary school performance index, and 2014–2015 elementary school actual campus financial data available from the Texas Education Agency (TEA)

Note. The 2016–2017 instructional services index for elementary schools was negatively associated with the 2015–2016 school performance index for elementary schools (Spearman rho = -0.72, p < 0.001). The 2016–2017 instructional services index for elementary schools was positively associated with the 2014–2015 actual per pupil expenditures for elementary schools (Spearman rho = 0.38, p < 0.001). The 2015–2016 school performance index for elementary schools was negatively associated with the 2014–2015 actual per pupil expenditures for elementary schools (Spearman rho = -0.58, p < 0.001). See Appendix B for a summary of relevant analyses.

Elementary School Performance Index Gaps, by Student Groups

The performance of four sets of student groups was compared within all AISD elementary schools in relation to (a) economic disadvantage status, (b) student status for receipt of SPED services, (c) student participation status in BE or ESL programs, and (d) race/ethnicity. In addition to the school-level data shown in Figure 1, the plots of school performance index for each student group within AISD elementary schools helped further reveal which schools:

- were performing above, at, or below the elementary school academic average and how their student groups compared with the average;
- showed the largest gaps in academic performance between student groups;
- had closed the academic performance gaps between student groups; and
- lacked representative numbers from different student groups.

Elementary Schools Beating the Correlations

Elementary schools scoring high on the instructional services index had a tendency to score low on the school performance index. Some schools beat this overall trend.

The following elementary schools showed greater-than-average instructional service index scores AND greater-than-average school performance index scores:

- **Blanton**
- **Ortega**
- **Ridgetop**
- **Wooten**
- **Graham**
- **Blazier**
- **Guerrero-Thompson**

Economic Disadvantage Status in AISD Elementary Schools

Across all the elementary schools shown in Figures 2 through 4, non-economically disadvantaged student groups significantly outperformed economically disadvantaged student groups (see Appendix B for the analysis summary). Table 1 provides descriptive statistics for the two economic disadvantage status groups. The median school performance index for economically disadvantaged elementary student groups was 0.77 (minimum = 0.69, maximum = 0.90). The median for non-economically disadvantaged elementary student groups was 0.91 (minimum = 0.79, maximum = 0.95).

Table 1.
Descriptive Statistics for Economic Disadvantage Status Student Groups

Student group	Number of student groups	Minimum	Median	Maximum
Non-economically disadvantaged	**39**	**0.79**	**0.91**	**0.95**
Economically disadvantaged	**70**	**0.69**	**0.77**	**0.90**

Figures 2 through 4 display the school performance index for economically disadvantaged and non-economically disadvantaged student groups at AISD elementary schools. Data are displayed for the economically disadvantaged and non-economically disadvantaged student groups when 25 or more students in the group had data for <u>each </u>of the four indicators in the elementary school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both economic status student groups at every school.

Figure 2.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Economic Disadvantage Status; Within the Akins, Anderson, Austin, and Bowie Vertical Teams
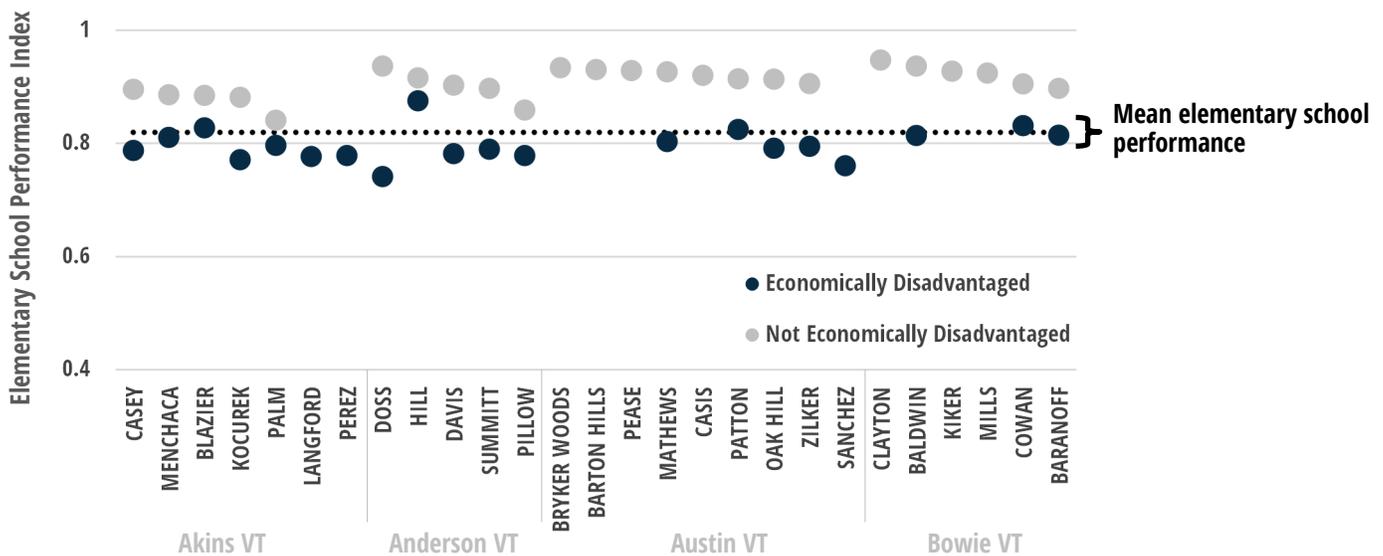
Source. 2015–2016 elementary school performance index and 2015–2016 economic disadvantage status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and prekindergarten (pre-K) centers.

Figure 3.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Economic Disadvantage Status; Within the Crockett, Eastside, Lanier, and LBJ Vertical Teams
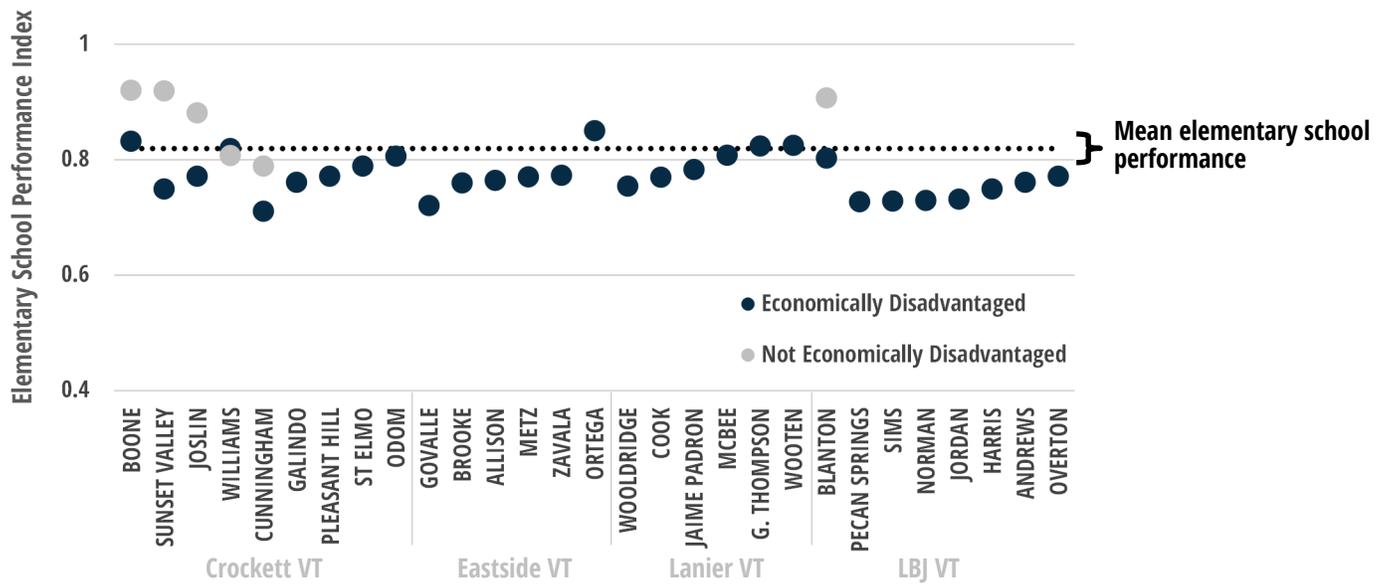
Source. 2015–2016 elementary school performance index and 2015–2016 economic disadvantage status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 4.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Economic Disadvantage Status; Within the McCallum, Reagan, and Travis Vertical Teams
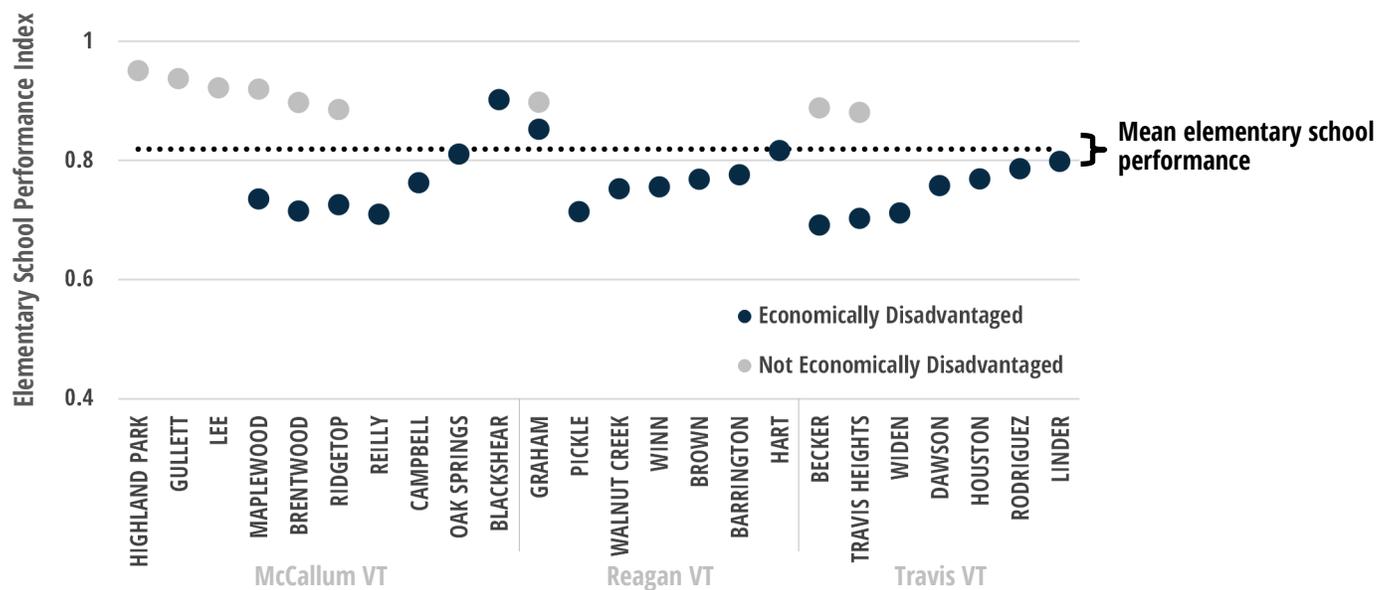
Source. 2015–2016 elementary school performance index and 2015–2016 economic disadvantage status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Participation Status in Special Education (SPED) Programs in AISD Elementary Schools

Across all the elementary schools shown in Figures 5 through 7, student groups not receiving SPED services significantly outperformed student groups receiving SPED services (see Appendix B for the analysis summary). Table 2 provides descriptive statistics for the two SPED student groups. The median school performance index for elementary student groups receiving SPED services was 0.67 (minimum = 0.59, maximum = 0.81). The median for elementary student groups not receiving SPED services was 0.83 (minimum = 0.72, maximum = 0.96).

Table 2.
Descriptive Statistics for Student Groups, Based on Receipt of Special Education (SPED) Services

Student group	Number of student groups	Minimum	Median	Maximum
Not receiving SPED services	81	0.72	0.83	0.96
Receiving SPED services	13	0.59	0.67	0.81

Figures 5 through 7 display the school performance index for student groups receiving SPED services and student groups not receiving SPED services at AISD elementary schools. Data are displayed for the two SPED services student groups when 25 or more students in the group had data for each of the four indicators in the elementary school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both SPED services student groups at every school.

Figure 5.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by SPED Services; Within the Akins, Anderson, Austin, and Bowie Vertical Teams
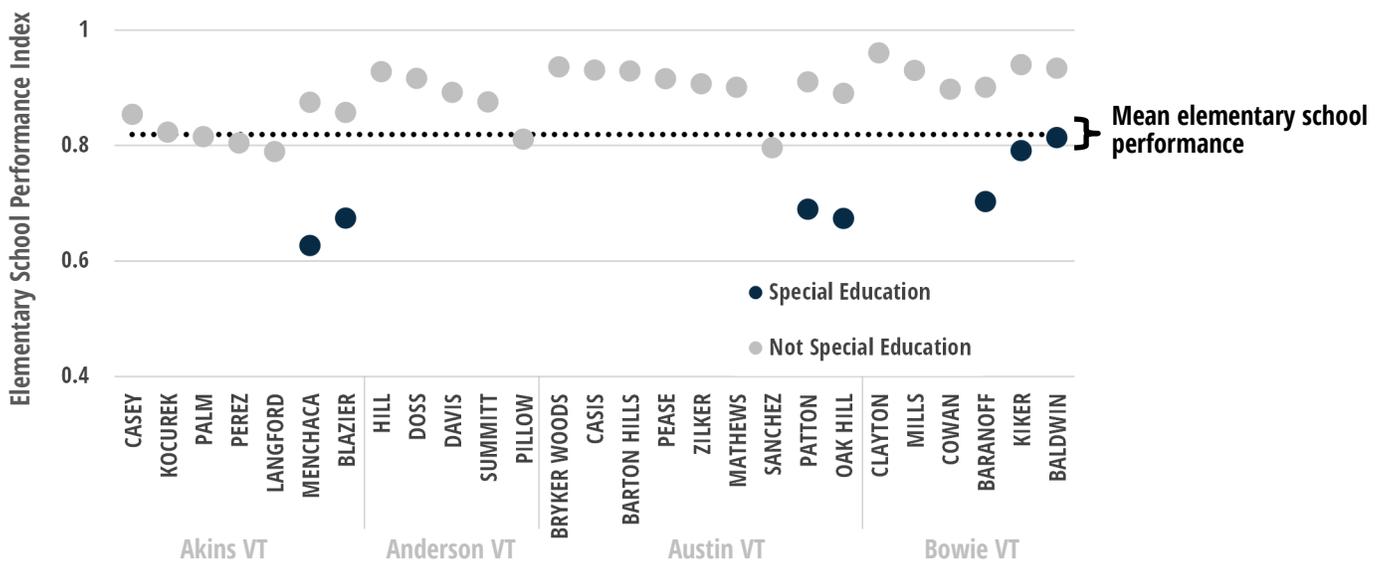
Source. 2015–2016 elementary school performance index and 2015–2016 SPED services status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 6.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by SPED Services; Within the Crockett, Eastside, Lanier, and LBJ Vertical Teams
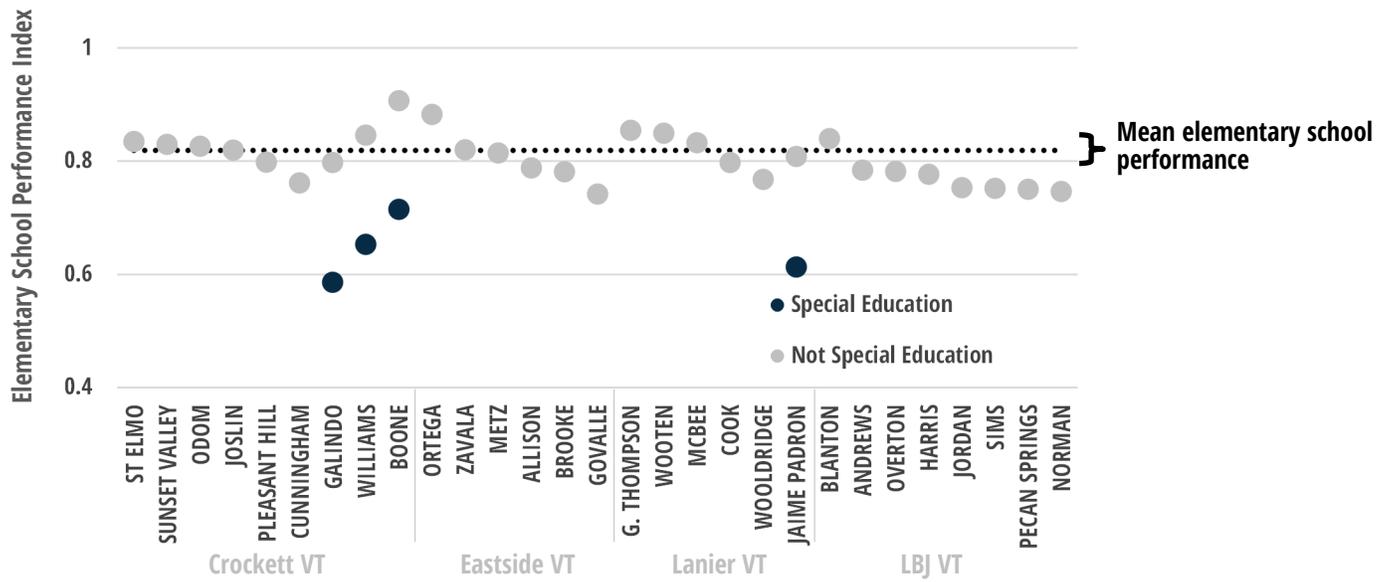
Source. 2015–2016 elementary school performance index and 2015–2016 SPED services status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 7.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by SPED Services; Within the McCallum, Reagan, and Travis Vertical Teams
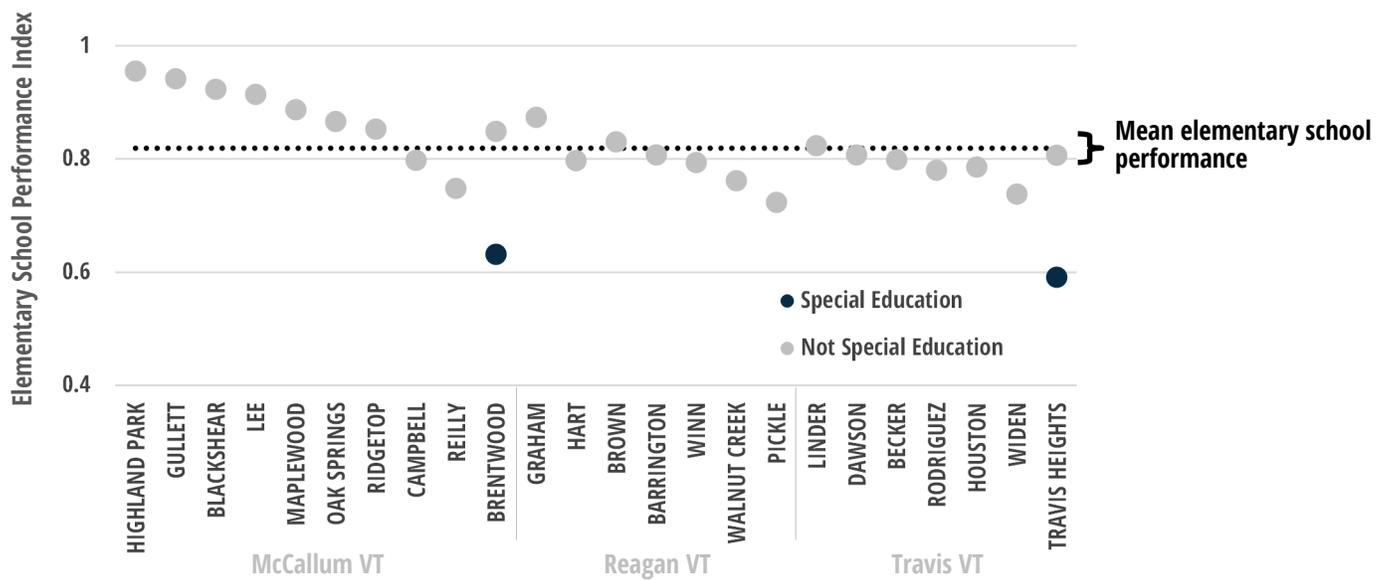
Source. 2015–2016 elementary school performance index and 2015–2016 SPED services status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

English Language Learner (ELL) Status in AISD Elementary Schools

Across all the elementary schools shown in Figures 8 through 10, groups of students not participating in BE or ESL programs performed equivalently to groups of students participating in BE or ESL programs (see Appendix B for the analysis summary). Table 3 provides descriptive statistics for the two ELL groups. The median elementary school performance index for groups of students not participating in BE or ESL programs was 0.8 (minimum = 0.68, maximum = 0.95). The median elementary school performance index for student groups participating in BE or ESL programs was 0.79 (minimum = 0.71, maximum = 0.91).

Table 3.
Descriptive Statistics for Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Minimum	Median	Maximum
Not participating in BE or ESL programs	79	0.68	0.80	0.95
Participating in BE or ESL programs	65	0.71	0.79	0.91

Figures 8 through 10 display the school performance index for student participation in BE or ESL programs at AISD elementary schools. Data are displayed for each of the student groups when 25 or more students in the group had data for <u>each </u>of the four indicators in the elementary school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both BE or ESL student groups at every school.

Figure 8.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Participation in BE or ESL Programs; Within the Akins, Anderson, Austin, and Bowie Vertical Teams
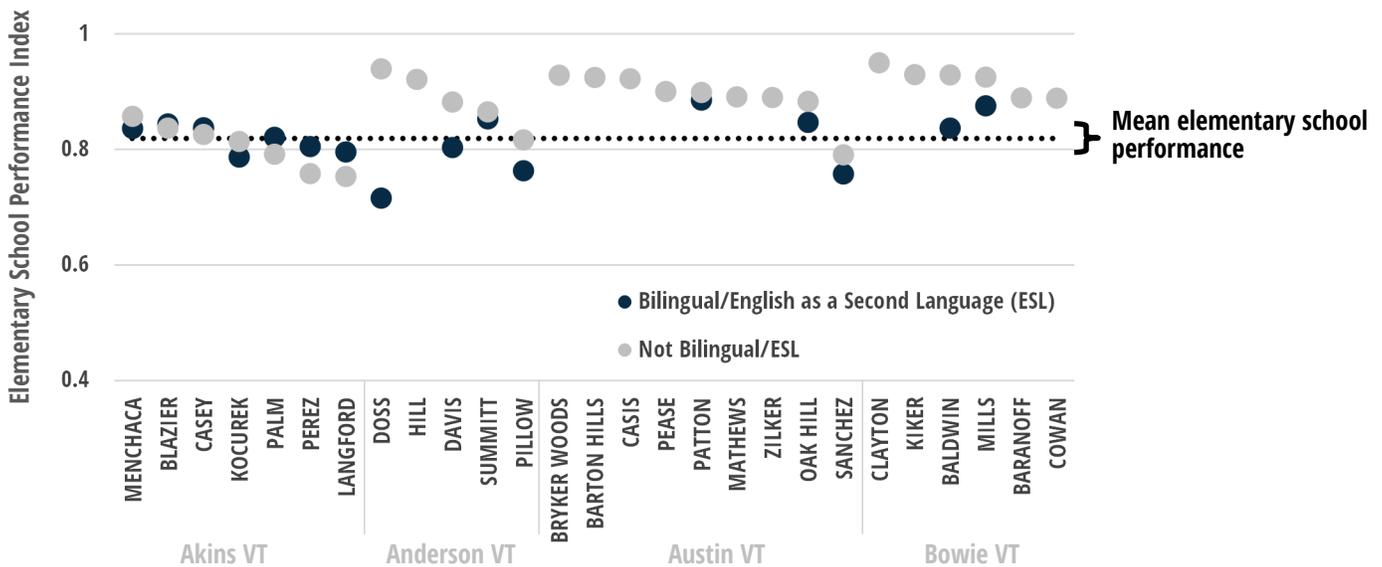
Source. 2015–2016 elementary school performance index and 2015–2016 BE or ESL status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 9.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Participation in BE or ESL Programs; Within the Crockett, Eastside, Lanier, and LBJ Vertical Teams
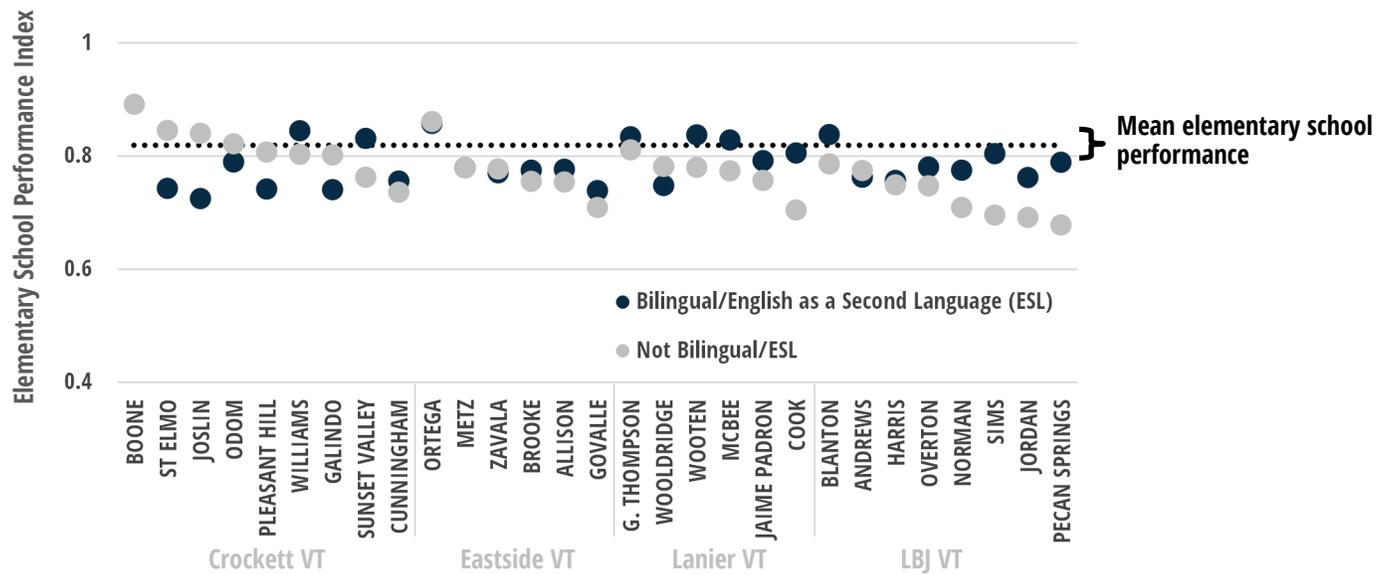
Figure 10.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Participation in BE or ESL Programs; Within the McCallum, Reagan, and Travis Vertical Teams
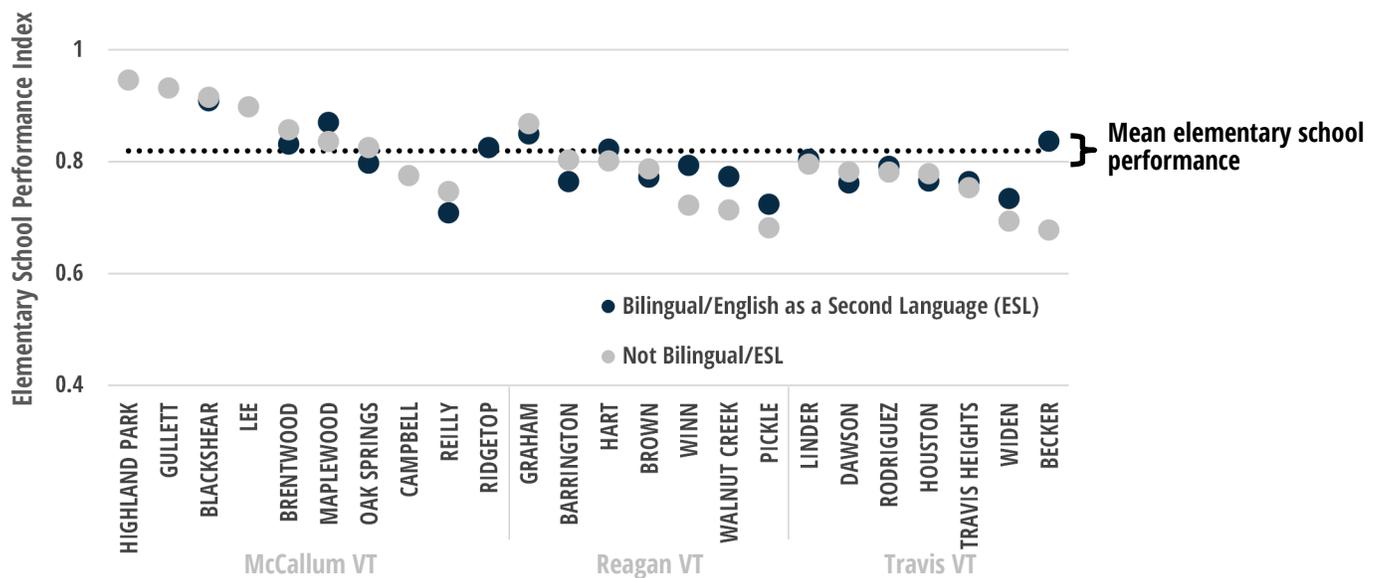
Source. 2015–2016 elementary school performance index and 2015–2016 BE or ESL status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Race/Ethnicity Groups in AISD Elementary Schools

Across all the elementary schools shown in Figures 11 through 13, race/ethnicity student groups differed significantly in performance (see Appendix B for the analysis summary). The Asian student group's performance did not differ significantly from that of the White student group; both the Asian and White student groups' performances differed significantly from that of the Hispanic and African American student groups. The Hispanic student group's performance differed significantly from the African American student group's performance.

Table 4 provides descriptive statistics for the four reported race/ethnicity student groups and indicates the significant differences between student groups. The median elementary school performance index score for the Asian student group was 0.94 (minimum = 0.83, maximum = 0.97), for the White student group was 0.92 (minimum = 0.83, maximum = 0.96), for the Hispanic student group was 0.79 (minimum = 0.7, maximum = 0.96), and for the African American student group was 0.75 (minimum = 0.68, maximum = 0.88).

Table 4.
Descriptive Statistics for Student Groups, Based on Race/Ethnicity

Student group	Number of student groups	Minimum	Median	Maximum	Significantly different race/ethnicity groups
Asian	7	0.83	0.94	0.97	I
White	34	0.83	0.92	0.96	I
Hispanic	81	0.70	0.79	0.96	II
African American	14	0.68	0.75	0.88	III

Note. Within each level, race/ethnicity groups performing equivalently on the school performance index share a common Roman numeral in the table; race/ethnicity groups performing significantly different on the school performance index have different Roman numerals.

Figures 11 through 13 display the school performance index for race/ethnicity student groups at AISD elementary schools. Data are displayed for each of the student groups when 25 or more students in the group had data for each of the four indicators in the elementary school performance index. Consequently, due to small student counts within several race/ethnicity student groups across all elementary schools, data are only displayed for the Hispanic, African American, White, and Asian race/ethnicities. Furthermore, student performance is not reported for all four race/ethnicity groups at every school due to the same reporting standard of 25 or more students per group with data for all indicators in the elementary school performance index.

Figure 11.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Race/ Ethnicity; Within the Akins, Anderson, Austin, and Bowie Vertical Teams
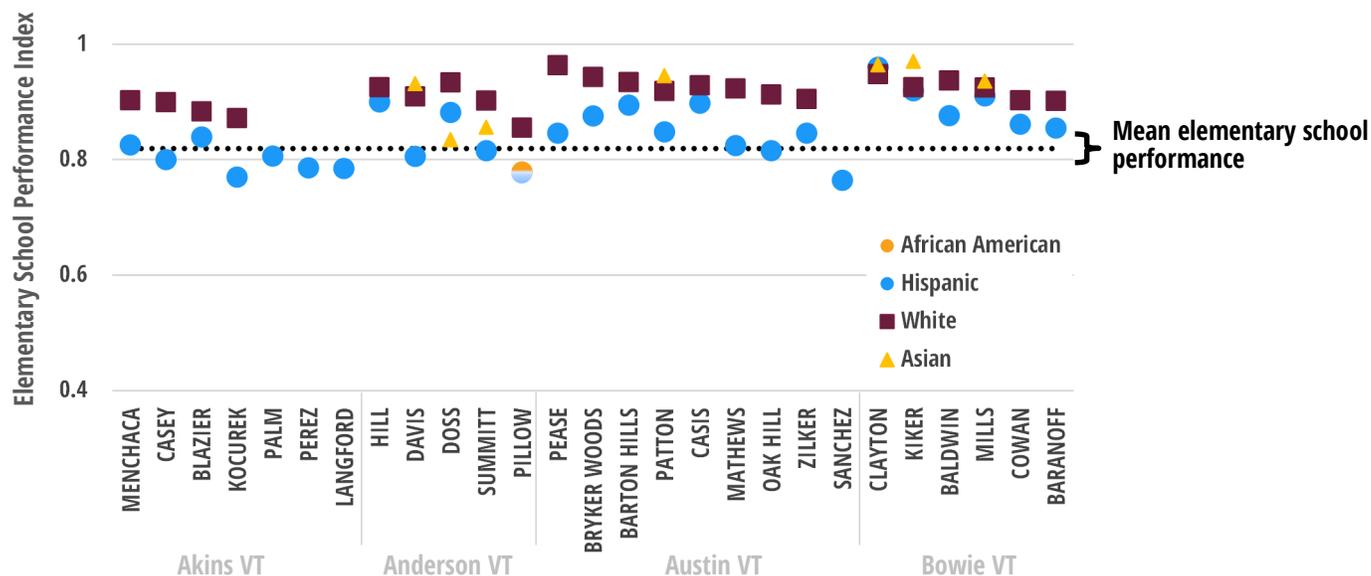

Source. 2015–2016 elementary school performance index and 2015–2016 race/ethnicity coding in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 12.
Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Race/ Ethnicity; Within the Crockett, Eastside, Lanier, and LBJ Vertical Teams
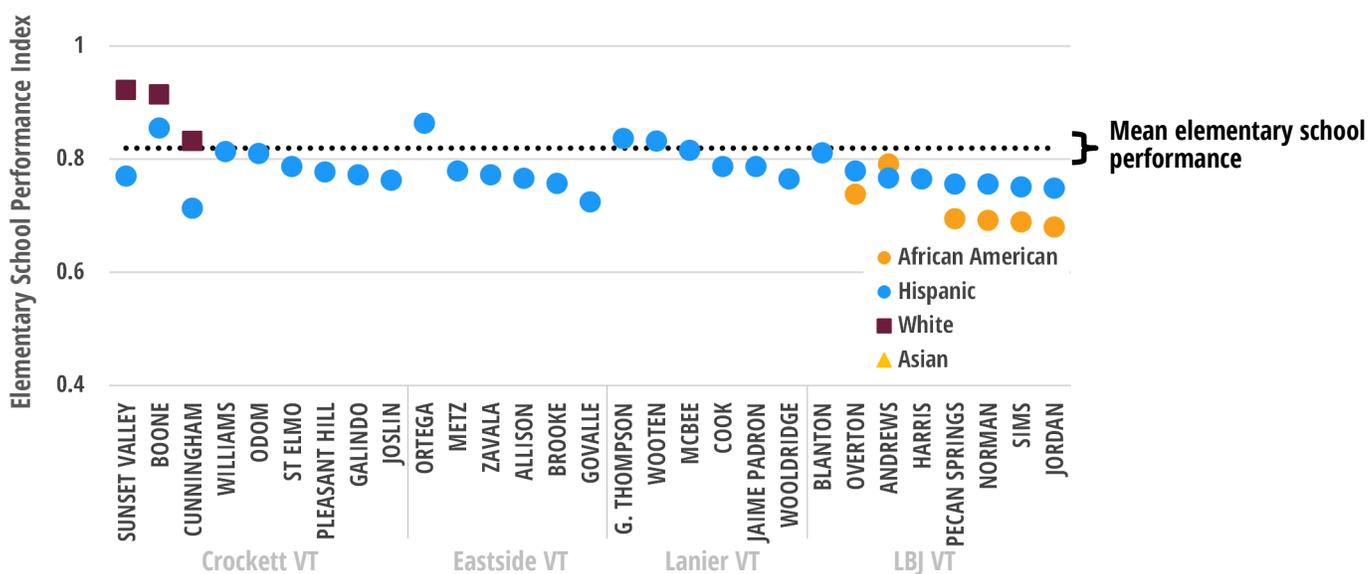
Source. 2015–2016 elementary school performance index and 2015–2016 race/ethnicity coding in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for early childhood centers and pre-K centers.

Figure 13.

Plot of the 2015–2016 School Performance Index for Elementary Schools in AISD; by Race/Ethnicity; Within the McCallum, Reagan, and Travis Vertical Teams
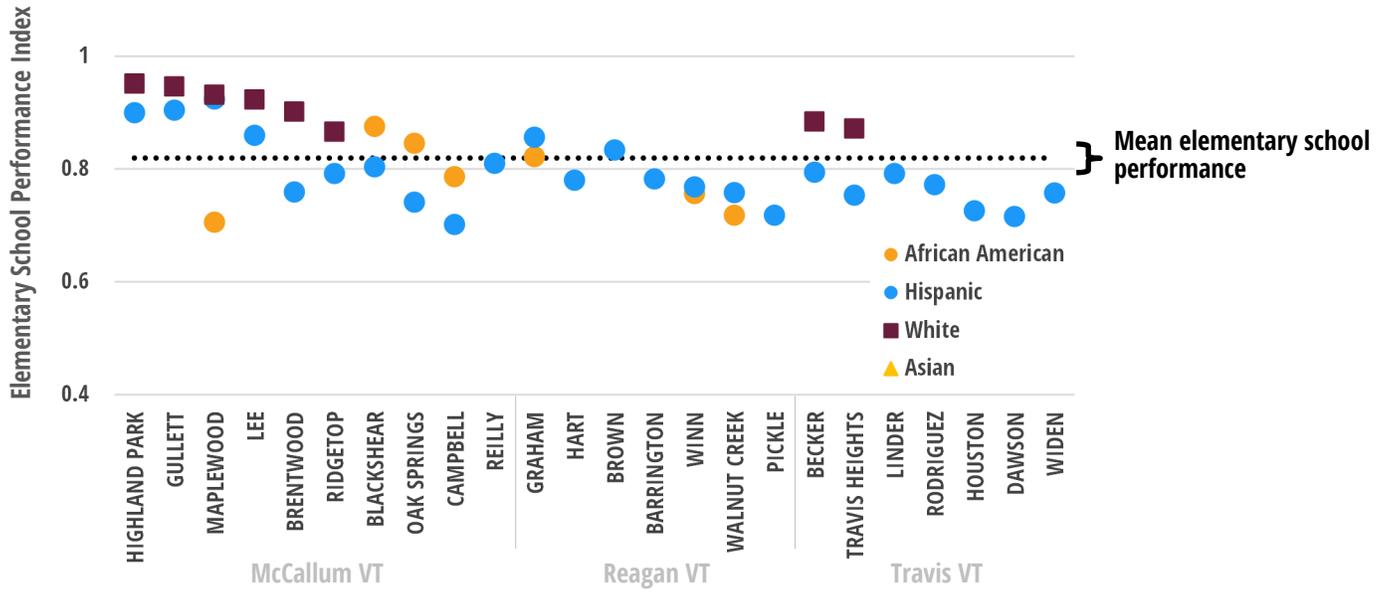
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Analysis of Equity in AISD Middle Schools

Middle School Performance Index in 2015–2016, by Instructional Services Provided

Generally, among AISD middle schools, higher instructional service index scores were associated with lower school performance index scores and higher per pupil expenditures. Two types of noteworthy exceptions to the overall middle school trends include middle schools with:

1. Greater-than-average instructional service index scores coinciding with greater-than-average school performance index scores (i.e., schools in the upper right hand quadrant of Figure 14); these schools serve student populations in need of the most instructional services but are performing above average academically in the district

2. Greater-than-average per pupil expenditures coinciding with greater-than-average school performance index scores (i.e., some gray and all light and dark blue colored data points above the y axis reference line of Figure 14); these schools have the greatest expenses per student based on need but are performing above average academically in the district

Middle schools are displayed in Figure 14 according to their 2016–2017 instructional services index, their 2015–2016 school performance index, and their 2014–2015 actual per pupil expenditures. The means of the middle schools' 2015–2016 instructional services index and 2015–2016 school performance index are shown as Y and X axis reference lines, respectively.

The 2016–2017 middle school instructional services index equals the mean of (a) the percentage of students economically disadvantaged, (b) the percentage of students served with BE or ESL programs, and (c) the percentage of students served with SPED services.

The 2015–2016 middle school performance index equals the mean of (a) the 2015–2016 STAAR passing rate across all tests, (b) the 2015–2016 percentage of students not disciplined, and (c) the 2015–2016 average daily attendance rate.

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Figure 14.
Plot of the 2015–2016 Instructional Services Index for Middle Schools in AISD, by the 2015–2016 School Performance Index and by the 2014–2015 Actual per Pupil Expenditures
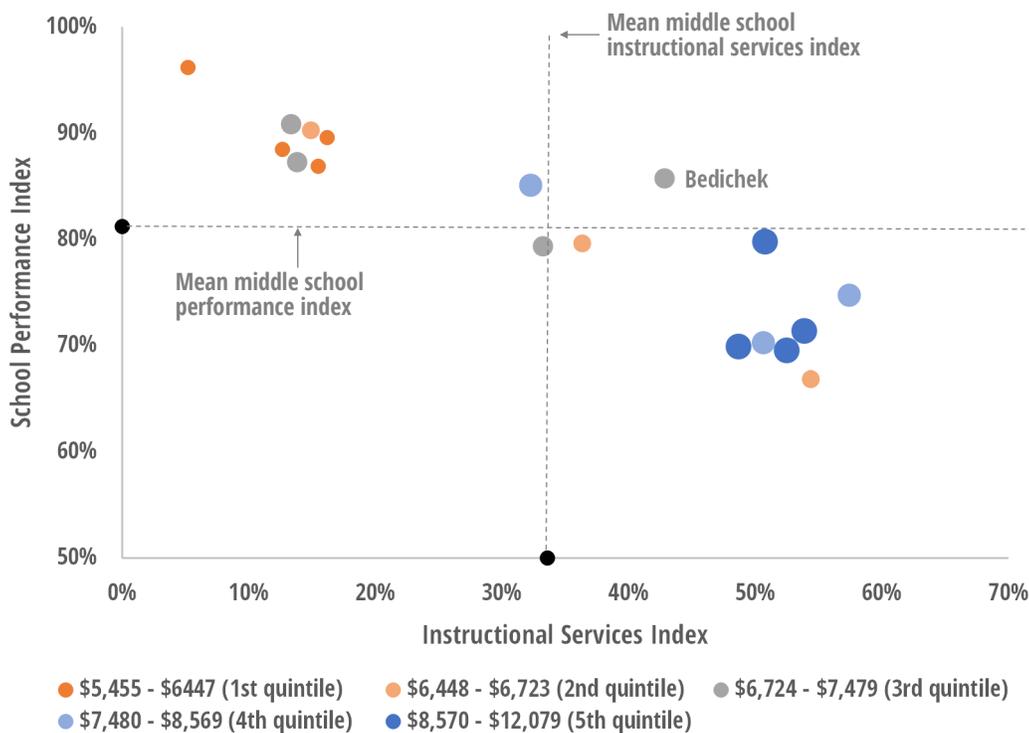
Source. 2016–2017 middle school instructional services index, 2015–2016 middle school performance index, and 2014–2015 middle school actual campus financial data available from the TEA
Note. The 2016–2017 instructional services index for middle schools was negatively associated with the 2015–2016 school performance index for middle schools (Spearman rho = -0.88, p < 0.001). The 2016–2017 instructional services index for middle schools was positively associated with the 2014–2015 actual per pupil expenditures for middle schools (Spearman rho = 0.65, p = 0.003). The 2015–2016 school performance index for middle schools was negatively associated with the 2014–2015 actual per pupil expenditures for middle schools (Spearman rho = -0.57, p = 0.014). See Appendix B for a summary of relevant analyses .

Middle School Performance Index Gaps, by Student Groups

The performance of four sets of student groups was compared within all AISD middle schools in relation to (a) economic disadvantage status, (b) student status for receipt of SPED services, (c) student participation status in BE or ESL programs, and (d) race/ethnicity. In addition to the school-level data shown in Figure 15, the plots of school performance index for each student group within AISD middle schools help further reveal which schools:

- were performing above, at, or below the middle school academic average and how their student groups compare with the average;

- showed the largest gaps in academic performance between student groups,

- had closed the academic performance gaps between student groups; and

- lacked representative numbers from different student groups.

Middle Schools Beating the Correlations

Middle schools scoring high on the instructional services index had a tendency to score low on the school performance index. Some schools beat this overall trend.

One middle schools showed greater-than-average instructional service index scores AND greater-than-average school performance index scores:

- **Bedichek**

Economic Disadvantage Status in AISD Middle Schools

Across all the middle schools shown in Figure 15, non-economically disadvantaged student groups significantly outperformed economically disadvantaged student groups (see Appendix B for the analysis summary). Table 5 provides descriptive statistics for the two economic disadvantage status groups. The median school performance index for economically disadvantaged middle school student groups was 0.77 (minimum = 0.67, maximum = 0.91). The median for non-economically disadvantaged middle school student groups was 0.91 (minimum = 0.71, maximum = 0.97).

Table 5.
Descriptive Statistics for Economic Disadvantage Status Student Groups

Student group	Number of student groups	Minimum	Median	Maximum
Non-economically disadvantaged	**17**	**0.71**	**0.91**	**0.97**
Economically disadvantaged	**18**	**0.67**	**0.77**	**0.91**

Figure 15 displays the school performance index for economically disadvantaged and non-economically disadvantaged student groups at AISD middle schools. Data are displayed for the economically disadvantaged and non-economically disadvantaged student groups when 25 or more students in the group had data for each of the three indicators in the middle school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both economic status student groups at every school.

Figure 15.
Plot of the 2015–2016 School Performance Index for Middle Schools in AISD, by Economic Disadvantage Status
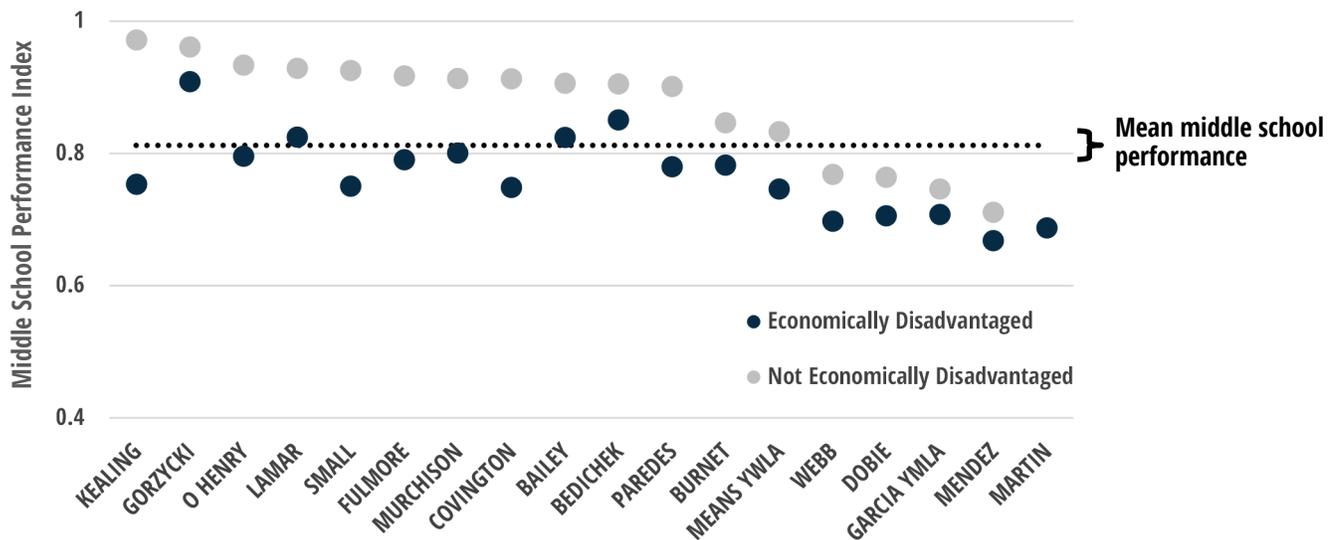
Source. 2015–2016 middle school performance index and 2015–2016 economic disadvantage status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for Ann Richards due to lack of comparable data across schools and measures.

Participation Status in SPED Programs in AISD Middle Schools

Across all the middle schools shown in Figure 16, student groups not receiving SPED services significantly outperformed student groups receiving SPED services (see Appendix B for the analysis summary). Table 6 provides descriptive statistics for the two SPED student groups. The median school performance index for middle school student groups receiving SPED services was 0.63 (minimum = 0.51, maximum = 0.87). The median for middle school student groups not receiving SPED services was 0.85 (minimum = 0.69, maximum = 0.97).

Table 6.
Descriptive Statistics for Student Groups, Based on Receipt of SPED Services

Student group	Number of student groups	Minimum	Median	Maximum
Not receiving SPED services	**18**	**0.69**	**0.85**	**0.97**
Receiving SPED services	**18**	**0.51**	**0.63**	**0.87**

Figure 16 displays the school performance index for student groups receiving SPED services and student groups not receiving SPED services at AISD middle schools. Data are displayed for the two SPED services student groups when 25 or more students in the group had data for <u>each </u>of the three indicators in the middle school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both SPED services student groups at every school.

Figure 16.
Plot of the 2015–2016 School Performance Index for Middle Schools in AISD, by SPED Services

Source. 2015–2016 middle school performance index and 2015–2016 SPED services status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for Ann Richards due to lack of comparable data across schools and measures.

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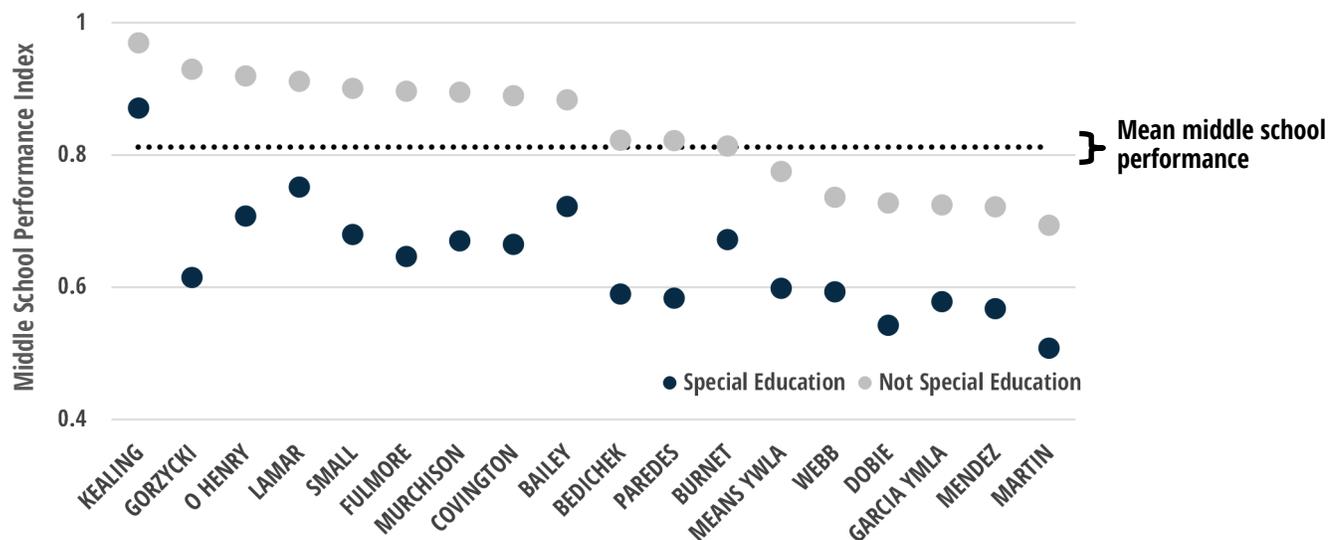
Across all the middle schools shown in Figure 17, the groups of students not participating in BE or ESL programs significantly outperformed the groups of students participating in BE or ESL programs (see Appendix B for the analysis summary). Table 7 provides descriptive statistics for the two ELL groups. The median middle school performance index for groups of students not participating in BE or ESL programs was 0.85 (minimum = 0.7, maximum = 0.96). The median middle school performance index for student groups participating in BE or ESL programs was 0.72 (minimum = 0.61, maximum = 0.92).

Table 7.
Descriptive Statistics for Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Minimum	Median	Maximum
Not participating in BE or ESL programs	**18**	**0.70**	**0.85**	**0.96**
Participating in BE or ESL programs	**18**	**0.61**	**0.72**	**0.92**

Figure 17 displays the school performance index for student participation in BE or ESL programs at AISD middle schools. Data are displayed for each of the student groups when 25 or more students in the group had data for <u>each</u> of the three indicators in the middle school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both ELL and non-ELL groups at every school.

Figure 17.
Plot of the 2015–2016 School Performance Index for Middle Schools in AISD, by Participation in BE or ESL Programs
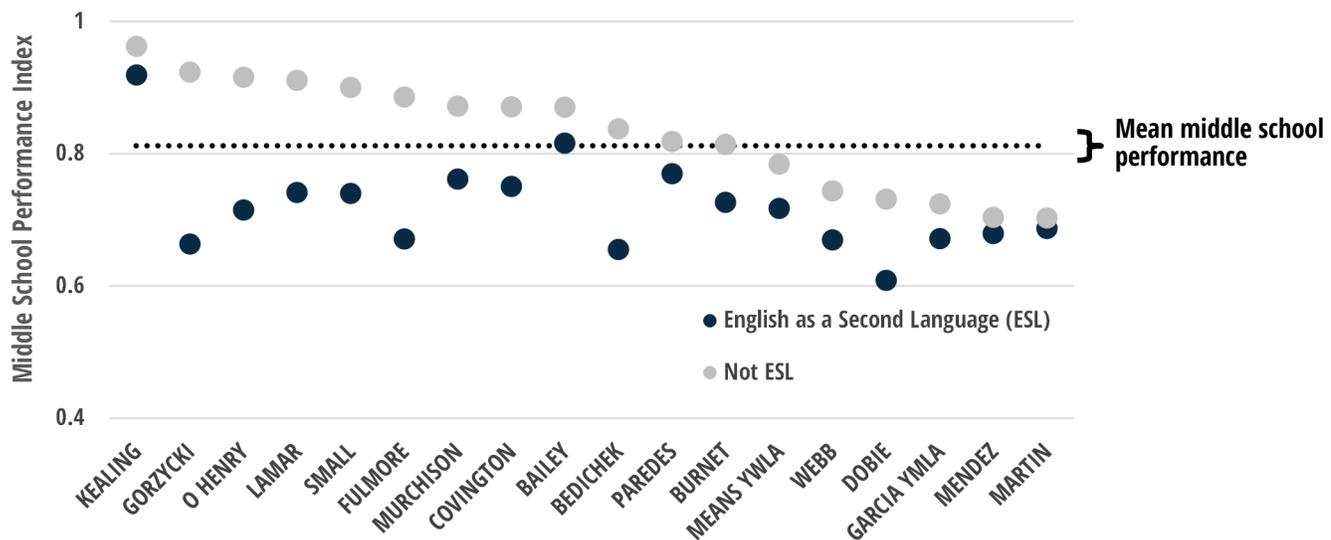
*Source.* 2015–2016 middle school performance index and 2015–2016 BE or ESL status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for Ann Richards due to lack of comparable data across schools and measures.

Race/Ethnicity Groups in AISD Middle Schools

Across all the middle schools shown in Figure 18, race/ethnicity student groups differed significantly in performance (see Appendix B for the analysis summary). The Asian, White, and two-or-more student groups did not differ significantly from each other, but all three differed significantly from the Hispanic and African American student groups. The Hispanic student group's performance differed significantly from the African American student group's performance.

Table 8 provides descriptive statistics for the five reported race/ethnicity student groups and indicates the significant differences between student groups. The median middle school performance index score for the Asian student group was 0.95 (minimum = 0.79, maximum = 0.98), for the White student group was 0.93 (minimum = 0.71, maximum = 0.98), for the two-or-more races was 0.91 (minimum = 0.86, maximum = 0.97), for the Hispanic student group was 0.81 (minimum = 0.67, maximum = 0.96), and for the African American student group was 0.74 (minimum = 0.62, maximum = 0.92).

Table 8.
Descriptive Statistics for Student Groups, Based on Race/Ethnicity

Student group	Number of student groups	Minimum	Median	Maximum	Significantly different race/ethnicity groups		
Asian	6	0.79	0.95	0.98	I		
White	12	0.71	0.93	0.98	I		
Two-or-more	7	0.86	0.91	0.97	I		
Hispanic	18	0.67	0.81	0.96		II	
African American	18	0.62	0.74	0.92			III

Note. Within each level, race/ethnicity groups performing equivalently on the school performance index share a common Roman numeral in the table; race/ethnicity groups performing significantly different on the school performance index have different Roman numerals.

Figure 18 displays the school performance index for race/ethnicity student groups at AISD middle schools. Data are displayed for each of the student groups when 25 or more students in the group had data for each of the three indicators in the middle school performance index. Consequently, due to small student counts within several race/ethnicity student groups across all middle schools, data are only displayed for the Hispanic, African American, White, Asian, and two-or-more race/ethnicities. Furthermore, student performance is not reported for all five race/ethnicity groups at every school due to the same reporting standard of 25 or more students per group with data for all indicators in the middle school performance index.

Figure 18.
Plot of the 2015–2016 School Performance Index for Middle Schools in AISD, by Race/ Ethnicity
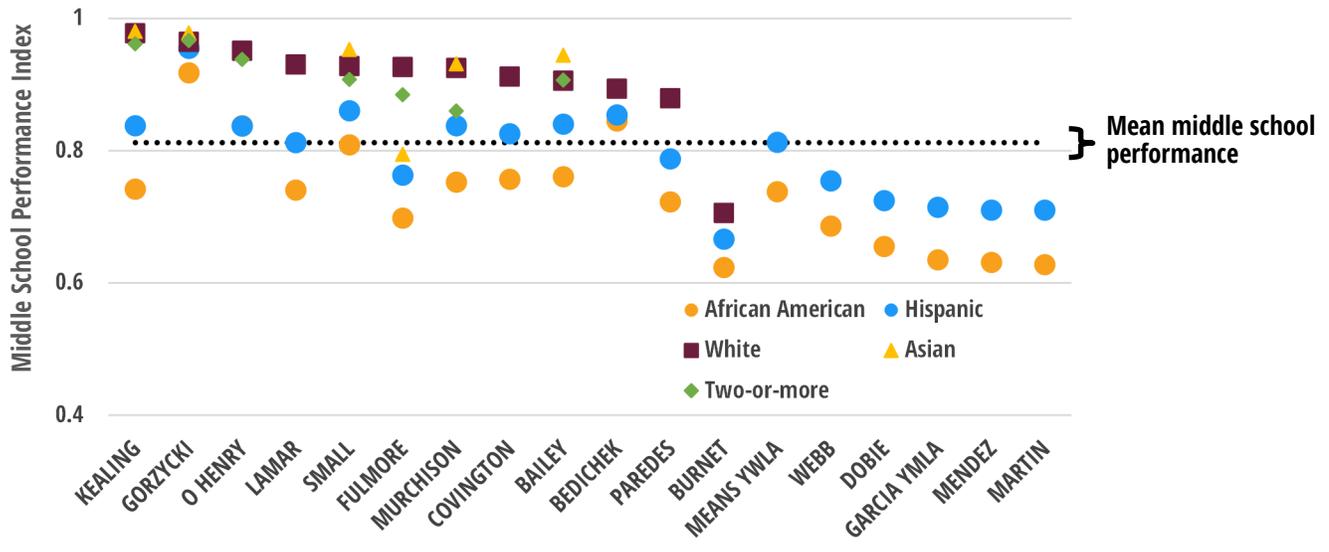
Source. 2015–2016 middle school performance index and 2015–2016 race/ethnicity coding in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for Ann Richards due to lack of comparable data across schools and measures.

Analysis of Equity in AISD High Schools

High School Performance Index in 2015–2016, by Instructional Services Provided

Generally, among AISD high schools, higher instructional service index scores were associated with lower school performance index scores and higher per pupil expenditures. On average, there were no exceptions to these two overall high school trends. Specifically:

- No high schools showed greater-than-average instructional service index scores coinciding with greater-than-average school performance index scores (i.e., schools in the upper right hand quadrant of Figure 19); these types of schools serve student populations in need of the most instructional services but are performing above average academically in the district

- No high schools showed greater-than-average per pupil expenditures coinciding with greater-than-average school performance index scores (i.e., some gray and all light and dark blue colored data points above the y axis reference line of Figure 19); these types of schools have the greatest expenses per student based on need but are performing above average academically in the district

High schools are displayed in Figure 19 according to their 2016–2017 instructional services index, their 2015–2016 school performance index, and their 2014–2015 actual per pupil expenditures. The means of the high schools' 2015–2016 instructional services index and 2015–2016 school performance index are shown as Y and X axis reference lines, respectively.

> The 2016–2017 high school instructional services index equals the mean of (a) the percentage of students economically disadvantaged, (b) the percentage of students participating in BE or ESL programs, and (c) the percentage of students served with SPED services.

> The 2015–2016 high school performance index equals the mean of (a) the 2015–2016 STAAR passing rate across all tests, (b) the 2015–2016 percentage of students not disciplined, (c) the 2015–2016 average daily attendance rate, (d) the 2014–2015 4-year graduation rate, and (e) the 2015–2016 percentage of seniors college ready (based on taking and passing the assessment, using both math and writing subjects).

Figure 19.
Plot of the 2015–2016 Instructional Services Index for High Schools in AISD, by the 2015–2016 School Performance Index and by the 2014–2015 Actual per Pupil Expenditures

- $5,782 - $6,497 (1st quintile)
- $6,498 - $7,100 (2nd quintile)
- $7,101 - $7,539 (3rd quintile)
- $7,540 - $9,671 (4th quintile)
- $9,672 - $19,960 (5th quintile)

Source. 2016–2017 high school instructional services index, 2015–2016 high school performance index, and 2014–2015 high school actual campus financial data available from the TEA

Note. The 2016–2017 instructional services index for high schools was negatively associated with the 2015–2016 school performance index for high schools (Spearman rho = -0.82, *p* < 0.001). The 2015–2016 instructional services index for high schools was positively associated with the 2014–2015 actual per pupil expenditures for high schools (Spearman rho = 0.7, *p* = 0.007). The 2015–2016 school performance index for high schools was negatively associated with the 2014–2015 actual per pupil expenditures for high schools (Spearman rho = -0.91, *p* < 0.001). See Appendix B for a summary of relevant analyses.

High School Performance Index Gaps, by Student Groups

The performance of four sets of student groups was compared within all AISD high schools in relation to (a) economic disadvantage status, (b) student status for receipt of SPED services, (c) student participation status in BE or ESL programs, and (d) race/ethnicity. In addition to the school-level data shown in Figure 19, the plots of school performance index for each student group within AISD high schools further reveal which schools:

- were performing above, at, or below the high school academic average and how their student groups compare with the average;
- showed the largest gaps in academic performance between student groups,
- had closed the academic performance gaps between student groups; and
- lacked representative numbers from different student groups.

No High Schools Beat the Correlations

High schools scoring high on the instructional services index had a tendency to score low on the school performance index. All high schools conformed to the overall trend.

In other words:

- No high schools showed greater-than-average instructional service index scores AND greater-than-average school performance index scores.

- Similarly, no high schools showed greater-than-average per pupil expenditures AND greater-than-average school performance index scores.

Economic Disadvantage Status in AISD High Schools

Across all high schools shown in Figure 20, non-economically disadvantaged student groups performed equivalently to economically disadvantaged student groups (see Appendix B for the analysis summary). Table 9 provides descriptive statistics for the two economic disadvantage status groups. The median school performance index for economically disadvantaged high school student groups was 0.75 (minimum = 0.66, maximum = 0.97). The median for non-economically disadvantaged high school student groups was 0.76 (minimum = 0.65, maximum = 0.98).

Table 9.
Descriptive Statistics for Economic Disadvantage Status Student Groups

Student group	Number of student groups	Minimum	Median	Maximum
Non-economically disadvantaged	12	0.65	0.76	0.98
Economically disadvantaged	13	0.66	0.75	0.97

Figure 20 displays the school performance index for economically disadvantaged and non-economically disadvantaged student groups at AISD high schools. Data are displayed for the economically disadvantaged and non-economically disadvantaged student groups when 25 or more students in the group had data for <u>each</u> of the five indicators in the high school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both economic disadvantage status student groups at every school.

Figure 20.
Plot of the 2015–2016 School Performance Index for High Schools in AISD, by Economic Disadvantage Status
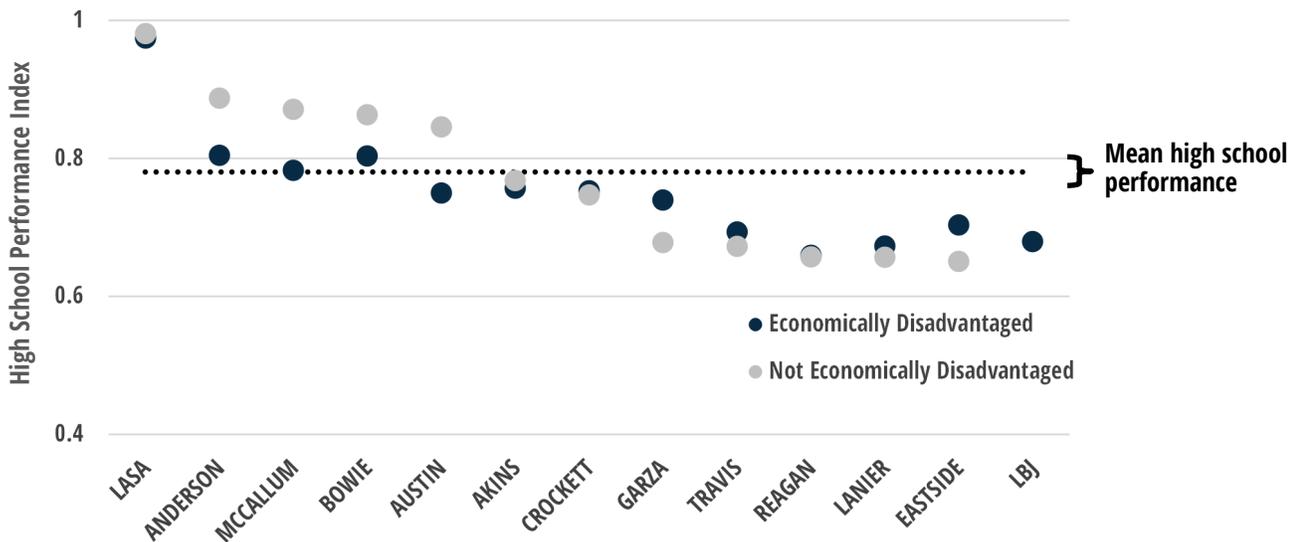
Source. 2015–2016 high school performance index and 2015–2016 economic disadvantage status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for International High School or either Graduation Prep Academy.

Participation Status in SPED Programs in AISD High Schools

Across all the high schools shown in Figure 21, only two high schools had student groups receiving SPED services large enough to report performance, given missing data considerations. However, using the available data, high school students not receiving SPED services showed greater median performance than did high school student groups receiving SPED services. Table 10 provides descriptive statistics for the two SPED student groups. The school performance index scores for the two reported high schools with student groups receiving SPED services were 0.60 and 0.71. The median for high school student groups not receiving SPED services was 0.75 (minimum = 0.65, maximum = 0.98).

Table 10.
Descriptive Statistics for Student Groups, Based on Receipt of SPED Services

Student group	Number of student groups	Minimum	Median	Maximum
Not receiving SPED services	13	0.65	0.75	0.98
Receiving SPED services	2	0.60	-	0.71

Figure 21 displays the school performance index for student groups receiving SPED services and student groups not receiving SPED services at AISD high schools. Data are displayed for the two SPED services student groups when 25 or more students in the group had data for each of the five indicators in the high school performance index. Consequently, due to small student counts at most schools, student performance is not reported for both SPED services student groups at every school.

Figure 21.
Plot of the 2015–2016 School Performance Index for High Schools in AISD, by SPED Services
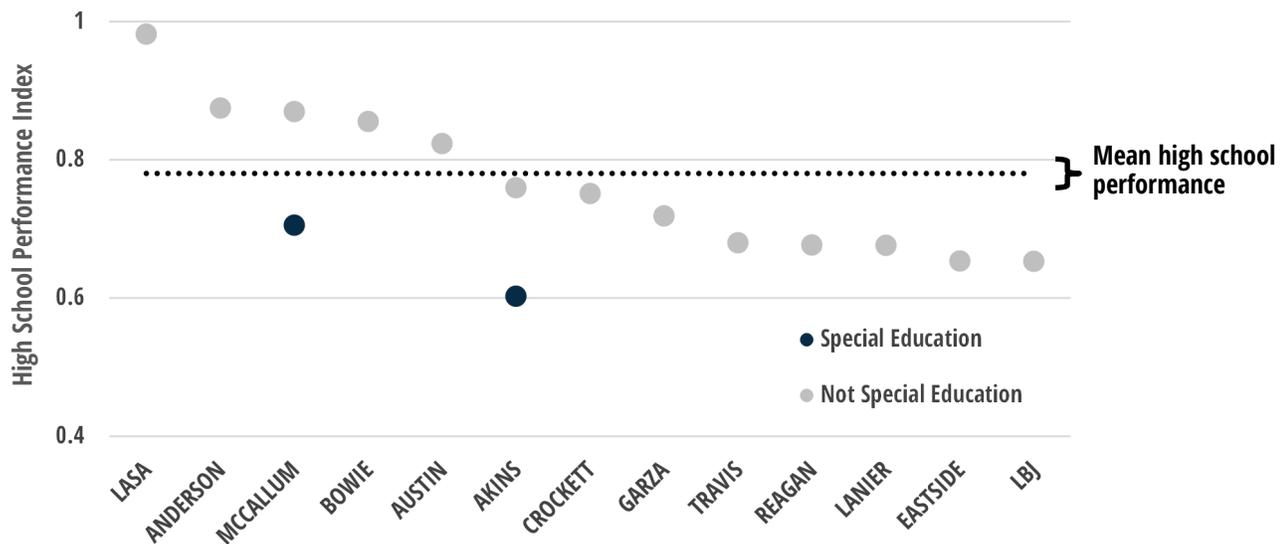
Source. 2015–2016 high school performance index and 2015–2016 SPED services status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for International High School or either Graduation Prep Academy.

ELL Status in AISD High Schools

Across all the high schools shown in Figure 22, the groups of students not participating in ESL programs significantly outperformed the groups of students participating in ESL programs (see Appendix B for the analysis summary). Table 11 provides descriptive statistics for the two ELL groups. The median high school performance index for groups of students not participating in ESL programs was 0.74 (minimum = 0.66, maximum = 0.98). The median high school performance index for student groups participating in ESL programs was 0.65 (minimum = 0.64, maximum = 0.69).

Table 11.
Descriptive Statistics for Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Minimum	Median	Maximum
Not participating in BE or ESL programs	13	0.66	0.74	0.98
Participating in BE or ESL programs	5	0.64	0.65	0.69

Figure 22 displays the school performance index for student participation in ESL programs at AISD high schools. Data are displayed for each of the student groups when 25 or more students in the group had data for <u>each </u>of the five indicators in the high school performance index. Consequently, due to small student counts at some schools, student performance is not reported for both SPED services student groups at every school.

Figure 22.
Plot of the 2015–2016 School Performance Index for High Schools in AISD, by Participation in BE or ESL Programs
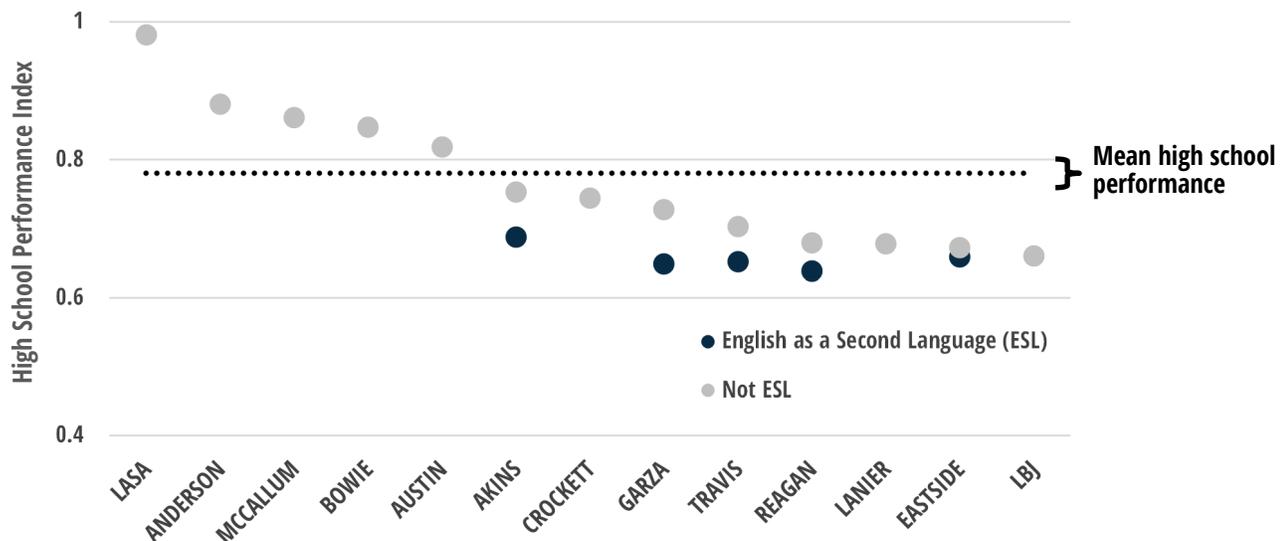
Source. 2015–2016 high school performance index and 2015–2016 BE or ESL status in the AISD futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for International High School or either Graduation Prep Academy.

Across all the high schools shown in Figure 23, race/ethnicity student groups differed significantly in performance (see Appendix B for the analysis summary). The Asian student group's performance did not differ significantly from that of the White student group. Both the Asian and White student groups' performance differed significantly from that of the Hispanic and African American student groups. The Hispanic student group's performance did not differ significantly from the African American student group's performance.

Table 12 provides descriptive statistics for the four reported race/ethnicity student groups and indicates the significant differences between student groups. The median high school performance index score for the Asian student group was 0.91 (minimum = 0.90, maximum = 0.99), for the White student group was 0.90 (minimum = 0.73, maximum = 0.99), for the Hispanic student group was 0.75 (minimum = 0.64, maximum = 0.97), and for the African American student group was 0.68 (minimum = 0.65, maximum = 0.76).

Table 12.
Descriptive Statistics for Student Groups, Based on Race/Ethnicity

Student group	Number of student groups	Minimum	Median	Maximum	Significantly different race/ethnicity groups	
Asian	3	0.90	0.91	0.99	I	
White	8	0.73	0.90	0.99	I	
Hispanic	13	0.64	0.75	0.97		II
African American	6	0.65	0.68	0.76		II

Note. Within each level, race/ethnicity groups performing equivalently on the school performance index share a common Roman numeral in the table; race/ethnicity groups performing significantly different on the school performance index have different Roman numerals.

Figure 23 displays the school performance index for race/ethnicity student groups at AISD high schools. Data are displayed for each of the student groups when 25 or more students in the group had data for each of the five indicators in the high school performance index. Consequently, due to small student counts within several race/ethnicity student groups across all high schools, data are only displayed for the Hispanic, African American, White, and Asian race/ethnicities. Furthermore, student performance is not reported for all four race/ethnicity groups at every school due to the same reporting standard of 25 or more students per group with data for all indicators in the high school performance index.

Figure 23.
Plot of the 2015–2016 School Performance Index for High Schools in AISD, by Race/Ethnicity
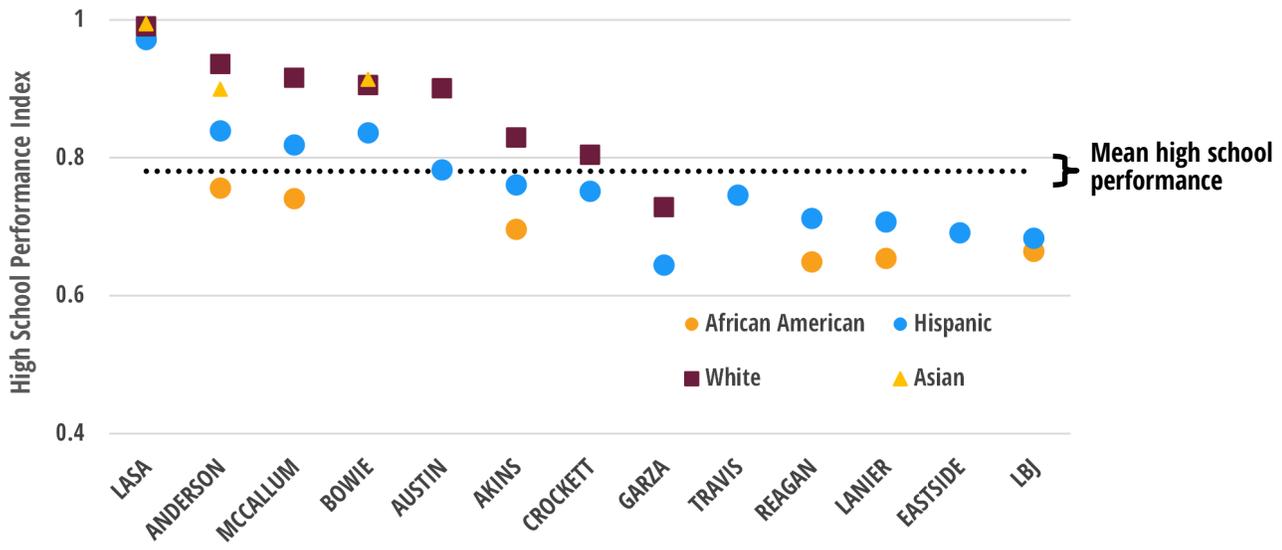
Source. 2015–2016 high school performance index and 2015–2016 race/ethnicity coding in the AISD
futrixdw.STU_BASIC_DEMO data table
Note. Results are not displayed for International High School or either Graduation Prep Academy.

Summary of Key Findings

Conclusions focus on two types of key findings :

1. Schools that beat the correlations
2. Gaps between student groups at each school level

Schools That beat the Correlations

Schools that beat the correlations were defined as anomalous schools whose individual campus data diverged from the overall trends, revealed with correlations, for all schools in their school level.

For example, each school level demonstrated strong negative correlations between scores on the instructional services index and scores on the school performance index (i.e., schools scoring high on the instructional services index had a tendency to score low on the school performance index, and vice versa). Similarly, each school level demonstrated strong negative correlations between per pupil expenditures and scores on the school performance index (i.e., schools with high per pupil expenditures had a tendency to score low on the school performance index, and vice versa).

Two types of beat the correlation schools are of particular interest in the current analyses (Table 13):

1. Schools with greater-than-average instructional service index scores coinciding with greater-than-average school performance index scores; these schools serve student populations in need of the most instructional services but are performing above average academically in the district
2. Schools with greater-than-average per pupil expenditures coinciding with greater-than-average school performance index scores; these schools have the greatest expenses per student based on need but are performing above average academically in the district

Table 13.
Schools Beating the Correlations, by School Level and Type of Anomaly

Type of anomaly	Schools that beat the correlations	
	Elementary schools	Middle schools
#1) Greater-than-average instructional service index scores *and* greater-than-average school performance index scores	Blanton Ortega Ridgetop Wooten Graham Blazier Guerrero-Thompson	Bedichek
#2) Greater-than-average per pupil expenditures AND greater-than-average school performance index scores	Blackshear Blanton Maplewood Ortega Pease Ridgetop	Covington

Source. 2016–2017 school instructional services indices, 2015–2016 school performance indices, and 2014–2015 elementary school actual campus financial data available from the Texas Education Agency.
Note. No high schools beat the correlations.

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Gaps Between Student Groups, by School Level

Table 14 highlights the student groups that significantly differed (i.e., ≠, a gap was observed) and those that performed equivalently (i.e., ≈, no gap was observed) on the school performance index at each school level.

- At elementary schools, student groups defined by economic disadvantage status and receipt of SPED services significantly differed on the school performance index. However, student groups defined by participation in BE or ESL programs did not significantly differ on the school performance index.

- At middle schools, student groups defined by economic disadvantage status, receipt of SPED services, and participation in BE or ESL programs all differed significantly on the school performance index.

- At high schools, student groups defined by economic disadvantage status did not significantly differ on the school performance index, but student groups defined by participation in BE or ESL programs differed significantly on the school performance index.

Table 14.
Comparisons Between Student Groups, by School Level

Student group		Elementary	Middle	High
Economic disadvantage status student groups	non-economically disadvantaged economically disadvantaged	≠ Evidence of a gap	≠ Evidence of a gap	≈ No evidence of a gap
Student groups based on receipt of SPED services	not receiving SPED services receiving SPED services	≠ Evidence of a gap	≠ Evidence of a gap	NA
Student groups based on participation in BE or ESL programs	not in BE or ESL programs participating in BE or ESL programs	≈ No evidence of a gap	≠ Evidence of a gap	≠ Evidence of a gap

Source. 2015–2016 school performance indices and 2015–2016 AISD futrixdw.STU_BASIC_DEMO data table.
Note. See Appendix B for a summary of relevant analyses.

While results between student groups aggregated by school level are important overall patterns, it is also important to recognize the schools beating their school level patterns. For example, although not exhaustive of all AISD schools, economic disadvantage status student groups performed equivalently at Williams elementary school (Figure 3) and both of the economic disadvantage status student groups performed above the elementary school average at Hill Elementary (Figure 2), both of the student groups based on receipt of SPED service performed above the middle school average at Kealing middle school (Figure 16), and ELL and non-ELL students performed similarly at Eastside Memorial high school (Figure 22).

Table 15 shows the race/ethnicity groups that performed similarly on the school performance index at each school level. <u>Within each level</u>, race/ethnicity groups performing equivalently on the school performance index share a common Roman numeral in the table; race/ethnicity groups performing significantly different on the school performance index have different Roman numerals.

Table 15.
Comparisons Between Race/Ethnicity Student Groups, by School Level

Student group	Significantly different race/ethnicity groups		
	Elementary	**Middle**	**High**
Asian	I	I	I
White	I	I	I
Two-or-more		I	
Hispanic	II	II	II
African American	III	III	II

Within elementary, middle, and high schools, the Asian and White student groups did not differ significantly on performance on the school performance index, but these two student groups significantly differed from the Hispanic and African American student groups. At elementary and middle schools, a secondary gap was also revealed between the Hispanic and African American student groups in which the Hispanic student groups significantly differed from the African American student groups.

As with the economic disadvantage status, SPED, and ELL student groups, there were exceptions to the overall patterns with the race/ethnicity student groups. For example, although not exhaustive of all AISD schools, the Hispanic student group performed equivalently to the Asian and White student groups at Clayton elementary school (Figure 11) and the African American student group performed both better than the elementary school average and the Hispanic student group at Blackshear elementary school (Figure 13); at Gorzycki middle school the African American, Hispanic, White, and Asian student groups all performed similarly and well above the middle school average (Figure 18); and at LASA high school the Hispanic, White, and Asian student groups all performed similarly and well above the high school average (Figure 23).

Appendix A. Proposed Revisions to Indices

The measures included in the school performance index differ by school level and school year, given (a) differences in relevant data at each school level, (b) revisions based on stakeholder input, and (c) changes in data availability from year to year. Tables 16 through 18 summarize, by school level, the measures included and proposed in each school level's school performance index.

Table 16.

Elementary School Performance Index (SPI) Measures Used in 2014–2015 and 2015–2016 and Recommended for 2016–2017

SPI measure used in 2014–2015 (released in 2015–2016)		SPI measure used in 2015–2016 (released in 2016–2017)		SPI measure proposed for 2016–2017 (released in 2017–2018)
STAAR passing rate across all tests (Index 1)	→	2015–2016 STAAR passing rate across all tests	→	2016–2017 STAAR passing rate across all tests
Percentage of students not disciplined	→	2015–2016 percentage of students not disciplined	→	2016–2017 percentage of students not disciplined
Average daily attendance rate	→	2015–2016 average daily attendance rate	→	2016–2017 average daily attendance rate
Percentage of students scoring at or above AISD's college ready standard on the DRA	≠	2015–2016 EoY percentage of students on grade level in TPRI or Tejas Lee assessment.	≠	2016–2017 EoY percentage of students on grade level on the overall skill of the Istation assessment.

Roughly 80% of AISD elementary schools currently have pre-K programs. Elementary school principals voiced concerns over different attendance patterns in pre-K than in kindergarten through grade 5. The fear was that schools with pre-K programs might appear to have a lower campus average daily attendance (ADA), given the tendency for more absences among pre-K children. However, elementary principals acknowledged the dilemma between including all their students versus intentionally excluding an entire grade of their students. No changes to the grade range used in the elementary school SPI are currently being considered, but restricting range to kindergarten through grade 5 is a possibility in the future if elementary principals are in agreement on excluding some of their students.

Although the Developmental Reading Assessment (DRA) was widely used in the district in 2014–2015, in the 2015–2016 school year, the DRA was used inconsistently throughout the district and should not be used in the SPI. The TPRI and Tejas Lee were required in AISD in 2015–2016 and were recommended for the 2015–2016 SPI. However, starting in the 2016–2017 school year, Istation will be the new standard district assessment for pre-K through grade 5 and is recommended for the elementary SPI in 2016–2017 and beyond.

TPRI and Tejas Lee provide an on-grade-level (yes or no) outcome for beginning of year (BoY), middle of year (MoY), and end of year (EoY) assessments. Some students will have been tested in both the English and Spanish versions. For the SPI, the recommendation is to use the EoY on-grade-level outcome (the better of the two if tested in English and Spanish), computed as the percentage of students on grade level (i.e., yes) out of all tested students.

With Istation, each grade assesses grade-specific skills, but all grades provide an overall skill score. Skill scores are normatively grouped into three tiers: tier 1 (above the 40th percentile), tier 2 (above the 20th percentile but at or below the 40th percentile), and tier 3 (at or below the 20th percentile). Tier 1 is interpreted as on grade level. As with TPRI and Tejas Lee, some students may have been tested in both English and Spanish versions of the tests; the lower tier (where lower is a better score) of the two tests should be used. Istation can be administered to students throughout the year for

progress monitoring and benchmark testing. Benchmark testing officially follows the testing calendar (i.e., BoY for kindergarten is October, BoY for grades 1 and 2 is September, MoY for kindergarten through grade 2 is January, and EoY for kindergarten through grade 2 is May). For the SPI, the recommendation is to use the EoY percentage of students on grade level (i.e., tier 1) out of all tested students.

Table 17.

Middle School SPI Measures Used in 2014–2015 and 2015–2016 and Recommended for 2016–2017

SPI measure used in 2014–2015 (released in 2015–2016)		SPI measure used in 2015–2016 (released in 2016–2017)		SPI measure proposed for 2016–2017 (released in 2017–2018)
STAAR passing rate across all tests	→	2015–2016 STAAR passing rate across all tests	→	2016–2017 STAAR passing rate across all tests
Percentage of students not disciplined	→	2015–2016 percentage of students not disciplined	→	2016–2017 percentage of students not disciplined
Average daily attendance rate	→	2015–2016 average daily attendance rate	→	2016–2017 average daily attendance rate
Percentage of students not annual dropouts	≠			

Among middle school principals responding to a survey requesting input on the SPI, 90% (n = 20) agreed that Texas English Language Proficiency Assessment System (TELPAS) and STAAR scores should be included; the middle school focus group representative also agreed. However, because TELPAS is only administered to ELLs, it is not representative of all students at schools. Consequently, inclusion of TELPAS in the SPI, especially given the student group disaggregation method, would be problematic and was not recommended for use in the SPI for 2015–2016 and beyond. The dropout rate was also not recommended for inclusion in the SPI, by unanimous principal request, given the presumed relationship to attendance.

Table 18.

High School SPI Measures Used in 2014–2015 and 2015–2016 and Recommended for 2016–2017

SPI measure used in 2014–2015 (released in 2015–2016)		SPI measure used in 2015–2016 (released in 2016–2017)		SPI measure proposed for 2016–2017 (released in 2017–2018)
STAAR passing rate across all tests	→	2015–2016 STAAR passing rate across all tests	→	2016–2017 STAAR passing rate across all tests
Percentage of students not disciplined	→	2015–2016 percentage of students not disciplined	→	2016–2017 percentage of students not disciplined
Average daily attendance rate	→	2015–2016 average daily attendance rate	→	2016–2017 average daily attendance rate
4-year graduation rate	→	2014–2015 4-year graduation rate	→	2015–2016 4-year graduation rate
Postsecondary enrollment rate	≠	2015–2016 Percentage seniors college ready	→	2016–2017 Percentage seniors college ready
Percentage of students not annual dropouts	≠			

High school principals supported inclusion of college readiness indicators in the high school SPI. Although principals wanted to expand indicators to include career ready indicators, such as industry licensures and certifications, the reporting of those career ready indicators is too inconsistent to be recommended for inclusion. However, given the breadth of the college readiness indicators using SAT, ACT, or TSI, the percentage of seniors meeting college readiness standards (i.e., took the test and met criteria) was recommended to replace the postsecondary enrollment rate.

Additional Considerations Relevant to all School Levels

Given considerations of data availability, the SPI for the prior school year will be computed in January of the subsequent school year following TEA's public release of the fall submission 1 PEIMS data.

Principals at all levels wanted to exclude a measure of dropout from the performance index, given the inclusion of attendance (dropout is almost the inverse of attendance).

- A measure of dropout will not be included in the 2015–2016 SPI or the 2016–2017 SPI.

Principals at all levels suggested the use of discipline as part of an instructional environment index, if an instructional environment index were to be developed rather than a performance index, and further stated that the discipline measure should capture what the school is doing about discipline, not just whether discipline occurs (or how it is selectively coded under school practices). Concern was also expressed about how to disaggregate school characteristics (e.g., SPED population) from discipline rates.

- The percentage of students not disciplined will remain in the 2015–2016 SPI, but is still under consideration for the 2016–2017 SPI.

Principals at all levels wanted to include a STAAR growth measure in addition to STAAR passing rates; the STAAR index 2 was suggested.

- The STAAR index 2 is not currently included in the proposed index measures due to its limited representativeness among elementary students.

Due to missingness in the data when the SPI is disaggregated by student group, principals at all levels suggested lowering the 25 student per index measure requirement for computing the SPI within student groups.

- The minimum reporting size of 25 is a TEA accountability subset standard; thus, it represents an external standard and is preferable for the SPI. However, there are acknowledged instances where a school's student subgroups are not represented in student group disaggregation because the minimum cell size was not met for one or more of the index measures. Staff are still exploring alternative minimum cell size requirements for future years, but no change is currently proposed for the 2015–2016 SPI. However, in consideration of the index's representativeness for student group disaggregation, an expanded coding of SPED services is proposed (see next bullet).

Principals requested additionally counting 504 services with the measure of SPED services in the instructional services index.

- Due to the different coding practices of AISD schools, some students who might be eligible for SPED services receive needed support through 504 funding. Consequently, in an attempt to make disaggregation by SPED services more inclusive, it is proposed that all students receiving 504 or SPED services be coded together (similar to the combined coding for students receiving BE or ESL services) for the 2016–2017 SPI.

Principals wondered if it would be possible to account for, or weight by, the category of ELL in the instructional services index.

- A weighting by the ELL program in which a student participates is not currently included in the proposed index measures, but could be taken under consideration in future years.

Appendix B. Summary of Analyses

Normality Tests

The Shapiro-Wilk test of normality was used to assess the normality of the school performance index, the instructional services index, and per pupil expenditures. Normality was assessed for the data across all school levels and within each level. Table 19 shows the results of each test. In general, the data were not normally distributed.

Table 19.

Shapiro-Wilk Test of Normality, by School Level and by Measure

Level of disaggregation	Variable	N	Shapiro-Wilk W	p value
Overall	School performance index	112	0.99	< 0.001*
	Instructional services index	112	0.90	< 0.001*
	Per pupil expenditures	112	0.74	< 0.001*
Elementary school	School performance index	81	0.95	0.003*
	Instructional services index	81	0.88	< 0.001*
	Per pupil expenditures	81	0.96	0.007*
Middle school	School performance index	18	0.93	0.194
	Instructional services index	18	0.87	0.018*
	Per pupil expenditures	18	0.82	0.003*
High school	School performance index	13	0.9	0.145
	Instructional services index	13	0.9	0.125
	Per pupil expenditures	13	0.68	< 0.001*

* marks each p value indicating a statistically significant deviation from a normal distribution.

Correlations

As a result of the general lack of normality of the variables examined, overall and school level correlations between the school performance index, the instructional services index, and per pupil expenditures used the Spearman's rank-order correlation coefficient, or rho.

Overall

A Spearman's rank-order correlation was run to determine the relationship between the overall instructional services index and the overall school performance index. There was a strong negative correlation between the two indices, which was statistically significant at the 0.05 level ($r_s(110) = -0.7$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the overall instructional services index and the overall per pupil expenditures. There was a moderate positive correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(110) = 0.42$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the overall school performance index and the overall per pupil expenditures. There was a strong negative correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(110) = -0.65$, $p < 0.001$).

Elementary School

A Spearman's rank-order correlation was run to determine the relationship between the elementary school instructional services index and the elementary school performance index. There was a strong negative correlation between the two indices, which was statistically significant at the 0.05 level ($r_s(79) = -0.72$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the elementary school instructional services index and the elementary school per pupil expenditures. There was a moderate positive correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(79) = 0.38$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the elementary school performance index and the elementary school per pupil expenditures. There was a strong negative correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(79) = -0.58$, $p < 0.001$).

Middle School

A Spearman's rank-order correlation was run to determine the relationship between the middle school instructional services index and the middle school performance index. There was a strong negative correlation between the two indices, which was statistically significant at the 0.05 level ($r_s(16) = -0.88$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the middle school instructional services index and the middle school per pupil expenditures. There was a strong positive correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(16) = 0.65$, $p = 0.003$).

A Spearman's rank-order correlation was run to determine the relationship between the middle school performance index and the middle school per pupil expenditures. There was a strong negative correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(16) = -0.57$, $p = 0.014$).

High School

A Spearman's rank-order correlation was run to determine the relationship between the high school instructional services index and the high school performance index. There was a strong negative correlation between the two indices, which was statistically significant at the 0.05 level ($r_s(11) = -0.82$, $p < 0.001$).

A Spearman's rank-order correlation was run to determine the relationship between the high school instructional services index and the high school per pupil expenditures. There was a strong positive correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(11) = 0.7$, $p = 0.007$).

A Spearman's rank-order correlation was run to determine the relationship between the high school performance index and the high school per pupil expenditures. There was a strong negative correlation between the index and expenditures, which was statistically significant at the 0.05 level ($r_s(11) = -0.91$, $p < 0.001$).

Elementary School Student Group Comparisons

Economic Disadvantage Status Student Groups

Table 20 displays the results of the Wilcoxon two-sample test for elementary economic disadvantage status student groups. The 39 not economically disadvantaged elementary student groups had higher mean ranks (88.5) than did the 70 economically disadvantaged elementary student groups (36.4) on the school performance index. The Wilcoxon statistic was $S = 3450.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.79, a large effect size by conventional standards (Cohen, 1988).

Table 20.
Results of the Wilcoxon Two-Sample Test for Elementary Economic Disadvantage Status Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not economically disadvantaged	39	88.5	3450.0	2145.0
Economically disadvantaged	70	36.4	2545.0	3850.0

Note. The effect size was computed from the *z* value (8.25) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Receipt of SPED Services

Table 21 displays the results of the Wilcoxon two-sample test for elementary for student groups receiving SPED services and student groups not receiving SPED services. The 81 student groups not receiving SPED services had higher mean ranks (53.35) than did the 13 student groups receiving SPED services (11.08) on the school performance index. The Wilcoxon statistic was $S = 144.0$ and the two-sided exact *p* value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, *r*, was equal to 0.53, a large effect size by conventional standards (Cohen, 1988).

Table 21.
Results of the Wilcoxon Two-Sample Test for Elementary Student Groups, Based on Receipt of SPED Services

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not receiving SPED services	81	53.35	4321.0	617.5
Receiving SPED services	13	11.08	144.0	3847.5

Note. The effect size was computed from the *z* value (5.18) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Participation in BE or ESL Programs

Table 22 displays the results of the Wilcoxon two-sample test for elementary groups of students not participating in BE or ESL programs and those participating in BE or ESL programs. The 79 student groups not participating in BE or ESL programs had higher mean ranks (76.94) than did the 65 student groups participating in BE or ESL programs (67.11) on the school performance index. The Wilcoxon statistic was $S = 4362.0$ and the two-sided exact *p* value was $p < 0.161$, which was not a statistically significant result at the 0.05 level. The effect size, *r*, was equal to 0.12, a smaller than typical effect size by conventional standards (Cohen, 1988).

Table 22.
Results of the Wilcoxon Two-Sample Test for Elementary Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not participating in BE or ESL programs	79	76.94	6078.0	5727.5
Participating in BE or ESL programs	65	67.11	4362.0	4712.5

Note. The effect size was computed from the *z* value (1.41) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The Kruskal-Wallis test comparing the school performance index for elementary race/ethnicity student groups indicated that the four race/ethnicity groups significantly differed in mean ranks on the school performance index. The Kruskal-Wallis H statistic equaled 71.89 (3, $N = 136$) and the two-sided p value was $p < 0.001$, which was statistically significant at the 0.05 level. Post hoc Wilcoxon two-sample tests compared the six pairs of race/ethnicity groups on the school performance index. Table 23 through Table 28 report the results of all post hoc race/ethnicity comparisons. Post hoc analyses do not include an alpha correction for multiple comparisons.

The 7 Asian elementary student groups had higher mean ranks (26.14) than the 34 White elementary student groups (19.94) on the school performance index (Table 23). The Wilcoxon statistic was $S = 183.0$ and the two-sided exact p value was $p = 0.224$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.19, a small effect size by conventional standards (Cohen, 1988).

Table 23.
Results of the Wilcoxon Two-Sample Test for Asian and White Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	7	26.14	183.0	147.0
White	34	19.94	678.0	714.0

Note. The effect size was computed from the z value (1.23) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 7 Asian elementary student groups had higher mean ranks (79.0) than the 81 Hispanic elementary student groups (41.5) on the school performance index (Table 24). The Wilcoxon statistic was $S = 553.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.4, a medium effect size by conventional standards (Cohen, 1988).

Table 24.
Results of the Wilcoxon Two-Sample Test for Asian and Hispanic Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	7	79.0	553.0	311.5
Hispanic	81	41.5	3363.0	3604.5

Note. The effect size was computed from the z value (3.72) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 7 Asian elementary student groups had higher mean ranks (17.6) than the 14 African American elementary student groups (7.7) on the school performance index (Table 25). The Wilcoxon statistic was $S = 123.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.74, a large effect size by conventional standards (Cohen, 1988).

Table 25.
Results of the Wilcoxon Two-Sample Test for Asian and African American Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	7	17.6	123.0	77.0
African American	14	7.7	108.0	154.0

Note. The effect size was computed from the z value (3.39) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 34 White elementary student groups had higher mean ranks (93.7) than the 81 Hispanic elementary student groups (43.0) on the school performance index (Table 26). The Wilcoxon statistic was $S = 3187.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.69, a large effect size by conventional standards (Cohen, 1988).

Table 26.
Results of the Wilcoxon Two-Sample Test for White and Hispanic Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	34	93.7	3187.0	1972.0
Hispanic	81	43.0	3483.0	4698.0

Note. The effect size was computed from the z value (7.44) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 34 White elementary student groups had higher mean ranks (31.3) than the 14 African American elementary student groups (7.9) on the school performance index (Table 27). The Wilcoxon statistic was $S = 111.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.76, a large effect size by conventional standards (Cohen, 1988).

Table 27.
Results of the Wilcoxon Two-Sample Test for White and African American Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	34	31.3	1065.0	833.0
African American	14	7.9	111.0	343.0

Note. The effect size was computed from the z value (5.25) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 81 Hispanic elementary student groups had higher mean ranks (51.1) than the 14 African American elementary student groups (29.8) on the school performance index (Table 28). The Wilcoxon statistic was $S = 417.0$ and the two-sided exact p value was $p = 0.007$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.27, a small effect size by conventional standards (Cohen, 1988).

Table 28.
Results of the Wilcoxon Two-Sample Test for Hispanic and African American Elementary Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Hispanic	81	51.1	4143.0	3888.0
African American	14	29.8	417.0	672.0

Note. The effect size was computed from the z value (2.67) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Middle School Student Group Comparisons

Economic Disadvantage Status Student Groups

Table 29 displays the results of the Wilcoxon two-sample test for middle school economic disadvantage status student groups. The 17 not economically disadvantaged middle school student groups had higher mean ranks (24.1) than the 18 economically disadvantaged middle school student groups (12.3) on the school performance index. The Wilcoxon statistic was $S = 409.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.57, a large effect size by conventional standards (Cohen, 1988).

Table 29.
Results of the Wilcoxon Two-Sample Test for Middle School Economic Disadvantage Status Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not economically disadvantaged	17	24.1	409.0	306.0
Economically disadvantaged	18	12.3	221.0	324.0

Note. The effect size was computed from the z value (3.38) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Receipt of SPED Services

Table 30 displays the results of the Wilcoxon two-sample test for middle school student groups receiving SPED services and student groups not receiving SPED services. The 18 student groups not receiving SPED services had higher mean ranks (26.5) than the 18 student groups receiving SPED services (10.4) on the school performance index. The Wilcoxon statistic was $S = 188.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.76, a large effect size by conventional standards (Cohen, 1988).

Table 30.
Results of the Wilcoxon Two-Sample Test for Middle School Student Groups, Based on Receipt of SPED Services

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not receiving SPED services	18	26.5	478.0	333.0
Receiving SPED services	18	10.4	188.0	333.0

Note. The effect size was computed from the z value (4.57) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Participation in BE or ESL Programs

Table 31 displays the results of the Wilcoxon two-sample test for middle school groups of students not participating in BE or ESL programs and those participating in BE or ESL programs. The 18 student groups not participating in BE or ESL programs had higher mean ranks (24.6) than the 18 student groups participating in BE or ESL programs (12.4) on the school performance index. The Wilcoxon statistic was $S = 224.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.57, a large effect size by conventional standards (Cohen, 1988).

Table 31.
Results of the Wilcoxon Two-Sample Test for Middle School Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not participating in BE or ESL programs	18	24.6	442.0	333.0
Participating in BE or ESL programs	18	12.4	224.0	333.0

Note. The effect size was computed from the z value (3.43) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Race/Ethnicity

The Kruskal-Wallis test comparing the school performance index for middle school race/ethnicity student groups indicated that the five race/ethnicity groups significantly differed in mean ranks on the school performance index. The Kruskal-Wallis H statistic equaled 34.2 (4, N = 61) and the two-sided p value was $p < 0.001$, which was statistically significant at the 0.05 level. Post hoc Wilcoxon two-sample tests compared the ten pairs of race/ethnicity groups on the school performance index. Table 32 through Table 41 report the results of all post hoc race/ethnicity comparisons. Post hoc analyses do not include an alpha correction for multiple comparisons.

The 6 Asian middle school student groups had higher mean ranks (12.3) than the 12 White middle school student groups (8.1) on the school performance index (Table 32). The Wilcoxon statistic was $S = 74.0$ and the two-sided exact p value was $p = 0.125$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.36, a medium effect size by conventional standards (Cohen, 1988).

Table 32.
Results of the Wilcoxon Two-Sample Test for Asian and White Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	6	12.3	74.0	57.0
White	12	8.1	97.0	114.0

Note. The effect size was computed from the z value (1.55) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 6 Asian middle school student groups had higher mean ranks (8.2) than the 7 Two-or-more races middle school student groups (6.0) on the school performance index (Table 33). The Wilcoxon statistic was $S = 49.0$ and the two-sided exact p value was $p = 0.366$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.26, a small effect size by conventional standards (Cohen, 1988).

Table 33.
Results of the Wilcoxon Two-Sample Test for Asian and Two-or-More Races Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	6	8.2	49.0	42.0
Two-or-more races	7	6.0	42.0	49.0

Note. The effect size was computed from the z value (0.93) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 6 Asian middle school student groups had higher mean ranks (19.3) than the 18 Hispanic middle school student groups (10.2) on the school performance index (Table 34). The Wilcoxon statistic was $S = 116.0$ and the two-sided exact p value was $p = 0.004$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.55, a large effect size by conventional standards (Cohen, 1988).

Table 34.
Results of the Wilcoxon Two-Sample Test for Asian and Hispanic Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	6	19.3	116.0	75.0
Hispanic	18	10.2	184.0	225.0

Note. The effect size was computed from the z value (2.72) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 6 Asian middle school student groups had higher mean ranks (20.8) than the 18 African American middle school student groups (9.7) on the school performance index (Table 35). The Wilcoxon statistic was $S = 125.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.67, a large effect size by conventional standards (Cohen, 1988).

Table 35.
Results of the Wilcoxon Two-Sample Test for Asian and African American Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	6	20.8	125.0	75.0
African American	18	9.7	175.0	225.0

Note. The effect size was computed from the z value (3.3) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 12 White middle school student groups had higher mean ranks (10.1) than the 7 two-or-more races middle school student groups (9.9) on the school performance index (Table 36). The Wilcoxon statistic was $S = 69.0$ and the two-sided exact p value was $p = 0.967$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.01, which is below the lower threshold for what would be considered a small effect size by conventional standards (Cohen, 1988).

Table 36.
Results of the Wilcoxon Two-Sample Test for White and Two-or-More Races Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	12	10.1	121.0	120.0
Two-or-more races	7	9.9	69.0	70.0

Note. The effect size was computed from the z value (0.04) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 12 White middle school student groups had higher mean ranks (22.3) than the 18 Hispanic middle school student groups (10.9) on the school performance index (Table 37). The Wilcoxon statistic was $S = 268.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.63, a large effect size by conventional standards (Cohen, 1988).

Table 37.
Results of the Wilcoxon Two-Sample Test for White and Hispanic Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	12	22.3	268.0	186.0
Hispanic	18	10.9	197.0	279.0

Note. The effect size was computed from the z value (3.45) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 12 White middle school student groups had higher mean ranks (23.3) than the 18 African American middle school student groups (10.3) on the school performance index (Table 38). The Wilcoxon statistic was $S = 279.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.71, a large effect size by conventional standards (Cohen, 1988).

Table 38.
Results of the Wilcoxon Two-Sample Test for White and African American Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	12	23.3	279.0	186.0
African American	18	10.3	186.0	279.0

Note. The effect size was computed from the z value (3.92) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 7 two-or-more races middle school student groups had higher mean ranks (21.1) than the 18 Hispanic middle school student groups (9.8) on the school performance index (Table 39). The Wilcoxon statistic was $S = 148.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.68, a large effect size by conventional standards (Cohen, 1988).

Table 39.
Results of the Wilcoxon Two-Sample Test for Two-or-More Races and Hispanic Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Two-or-more races	7	21.1	148.0	91.0
Hispanic	18	9.8	177.0	234.0

Note. The effect size was computed from the z value (3.42) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 7 two-or-more races middle school student groups had higher mean ranks (21.4) than the 18 African American middle school student groups (9.7) on the school performance index (Table 40). The Wilcoxon statistic was $S = 150.0$ and the two-sided exact p value was $p < 0.001$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.71, a large effect size by conventional standards (Cohen, 1988).

Table 40.
Results of the Wilcoxon Two-Sample Test for Two-or-More Races and African American Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Two-or-more races	7	21.4	150.0	91.0
African American	18	9.7	175.0	234.0

Note. The effect size was computed from the z value (3.54) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 18 Hispanic middle school student groups had higher mean ranks (22.4) than the 18 African American middle school student groups (14.6) on the school performance index (Table 41). The Wilcoxon statistic was $S = 404.0$ and the two-sided exact p value was $p = 0.024$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.37, a medium effect size by conventional standards (Cohen, 1988).

Table 41.
Results of the Wilcoxon Two-Sample Test for Hispanic and African American Middle School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Hispanic	18	22.4	404.0	333.0
African American	18	14.6	262.0	333.0

Note. The effect size was computed from the z value (2.23) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

High School Student Group Comparisons

Economic Disadvantage Status Student Groups

Table 42 displays the results of the Wilcoxon two-sample test for high school economic disadvantage status student groups. The 12 not economically disadvantaged high school student groups had higher mean ranks (13.1) than the 13 economically disadvantaged high school student groups (12.9) on the school performance index. The Wilcoxon statistic was $S = 157.0$ and the two-sided exact p value was $p = 0.979$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.01, which is below the lower threshold for what would be considered a small effect size by conventional standards (Cohen, 1988).

Table 42.
Results of the Wilcoxon Two-Sample Test for High School Economic Disadvantage Status Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not economically disadvantaged	12	13.1	157.0	156.0
Economically disadvantaged	13	12.9	168.0	169.0

Note. The effect size was computed from the z value (0.03) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Receipt of SPED Services

No comparisons were made between high school student groups receiving SPED services and student groups not receiving SPED services due to too few groups (i.e., the number of students groups equaled 2 and 13, respectively).

Student Groups, Based on Participation in ESL Programs

Table 43 displays the results of the Wilcoxon two-sample test for high school groups of students not participating in ESL programs and those participating in ESL programs. The 13 student groups not participating in ESL programs had higher mean ranks (11.7) than the 5 student groups participating in ESL programs (3.8) on the school performance index. The Wilcoxon statistic was $S = 19.0$ and the two-sided exact p value was $p = 0.003$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.65, a large effect size by conventional standards (Cohen, 1988).

Table 43.
Results of the Wilcoxon Two-Sample Test for High School Student Groups, Based on Participation in BE or ESL Programs

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Not participating in BE or ESL programs	13	11.7	152.0	123.5
Participating in BE or ESL programs	5	3.8	19.0	47.5

Note. The effect size was computed from the z value (2.76) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

Student Groups, Based on Race/Ethnicity

The Kruskal-Wallis test comparing the school performance index for high school race/ethnicity student groups indicated that the four race/ethnicity groups significantly differed in mean ranks on the school performance index. The Kruskal-Wallis H statistic equaled 14.9 (3, N = 30) and the two-sided p value was $p = 0.002$, which was statistically significant at the 0.05 level. Post hoc Wilcoxon two-sample tests compared the six pairs of race/ethnicity groups on the school performance index. Table 44 through Table 49 report the results of all post hoc race/ethnicity comparisons. Post hoc analyses do not include an alpha correction for multiple comparisons.

The three Asian high school student groups had higher mean ranks (7.3) than did the eight White high school student groups (5.5) on the school performance index (Table 44). The Wilcoxon statistic was $S = 22.0$, and the two-sided exact p value was $p = 0.497$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.22, a small effect size by conventional standards (Cohen, 1988).

Table 44.
Results of the Wilcoxon Two-Sample Test for Asian and White High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	3	7.3	22.0	18.0
White	8	5.5	44.0	48.0

Note. The effect size was computed from the z value (0.71) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The three Asian high school student groups had higher mean ranks (14.3) than did the 13 Hispanic high school student groups (7.2) on the school performance index (Table 45). The Wilcoxon statistic was $S = 43.0$, and the two-sided exact p value was $p = 0.014$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.57, a large effect size by conventional standards (Cohen, 1988).

Table 45.
Results of the Wilcoxon Two-Sample Test for Asian and Hispanic High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	3	14.3	43.0	25.5
Hispanic	13	7.2	93.0	110.5

Note. The effect size was computed from the z value (2.29) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The three Asian high school student groups had higher mean ranks (8.0) than did the six African American high school student groups (3.5) on the school performance index (Table 46). The Wilcoxon statistic was $S = 24.0$, and the two-sided exact p value was $p = 0.024$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.73, a large effect size by conventional standards (Cohen, 1988).

Table 46.
Results of the Wilcoxon Two-Sample Test for Asian and African American High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Asian	3	8.0	24.0	15.0
African American	6	3.5	21.0	30.0

Note. The effect size was computed from the z value (2.19) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The eight White high school student groups had higher mean ranks (15.1) than did the 13 Hispanic high school student groups (8.5) on the school performance index (Table 47). The Wilcoxon statistic was $S = 121.0$, and the two-sided exact p value was $p = 0.012$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.51, a large effect size by conventional standards (Cohen, 1988).

Table 47.
Results of the Wilcoxon Two-Sample Test for White and Hispanic High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	8	15.1	121.0	88.0
Hispanic	13	8.5	110.0	143.0

Note. The effect size was computed from the z value (2.35) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The eight White high school student groups had higher mean ranks (10.3) than did the six African American high school student groups (3.8) on the school performance index (Table 48). The Wilcoxon statistic was $S = 23.0$, and the two-sided exact p value was $p = 0.003$, which was a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.74, a large effect size by conventional standards (Cohen, 1988).

Table 48.
Results of the Wilcoxon Two-Sample Test for White and African American High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
White	8	10.3	82.0	60.0
African American	6	3.8	23.0	45.0

Note. The effect size was computed from the z value (2.78) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

The 13 Hispanic high school student groups had higher mean ranks (11.6) than did the six African American high school student groups (6.5) on the school performance index (Table 49). The Wilcoxon statistic was $S = 39.0$, and the two-sided exact p value was $p = 0.072$, which was not a statistically significant result at the 0.05 level. The effect size, r, was equal to 0.41, a medium effect size by conventional standards (Cohen, 1988).

Table 49.
Results of the Wilcoxon Two-Sample Test for Hispanic and African American High School Student Groups

Student group	Number of student groups	Mean of ranks	Sum of ranks	Expected under H_o
Hispanic	13	11.6	151.0	130.0
African American	6	6.5	39.0	60.0

Note. The effect size was computed from the z value (1.8) provided in the Wilcoxon test statistics output table, where $r = z / \sqrt{N}$.

References

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hutchins, S. D., Looby, K., & Reach, J. (2016). Equity in Austin Independent School District: District summary of equity work and action steps for improvement (DRE Publication #16.11). Austin, TX: Austin Independent School District.

Hutchins, S. D., Looby, K., & Schmitt, L. (2016). Equity in Austin Independent School District: Analysis of equity goal barriers, Spring 2016 (DRE Publication #15.44e RBi). Austin, TX: Austin Independent School District.

Schmitt, L. (2016a). Equity in Austin Independent School District: Elementary, middle, and high school performance in 2014–2015 (DRE Publication #15.37). Austin, TX: Austin Independent School District.

Schmitt, L. (2016b). Equity school performance index (DRE #15.55 RBi). Austin, TX: Austin Independent School District.

Schmitt, L., & Hutchins, S. D. (2016). Equity in Austin Independent School District: Results from the district equity self-assessment, Spring 2016 (DRE Publication #15.44d RBi). Austin, TX: Austin Independent School District.

Schmitt, L., Williams, H., & Christian, C. (2016). Analysis of performance gaps: Austin Independent School District, 2012–2013 through 2014–2015 (DRE Publication #15.39). Austin, TX: Austin Independent School District.