

Synthesis of Analyses Regarding COVID-19 Pandemic Impact

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Overview

Schools in Arkansas closed for in-person instruction March 17, 2020 by order of Governor Hutchinson. The temporary closure was expanded to April 17 on March 19, 2020 and extended for the remainder of the school year on April 6 of 2020 in response to the COVID-19 Pandemic emergency. During the in-person closure schools were instructed to follow their approved Alternate Means of Instruction plans and to focus on essential standards already covered during the school year.

During the summer of 2020 the Arkansas Department of Education, Division of Elementary and Secondary Education released information for districts to submit Arkansas Ready to Learn plans to ensure continuity of learning during the 2020-21 school year (henceforth referred to as 2021 school year) in the event of further outbreaks. Districts were required to offer, at a minimum, 5 days of in-person instruction for families opting for it. In addition, districts could submit plans to offer fully virtual and/or hybrid options (in-person and virtual) for families.

Districts started the 2021 school year with approved Arkansas Ready for Learning plans in place. Public health data provided by the [Arkansas Department of Health](#) and agencies such as [ACHI](#) provide the trends of COVID-19 cases which differentially impacted student attendance for periods of time during the school year. The overall trend of cases in Arkansas is captured in the figure below. Note the beginning of the 2021 school year coincided with increasing cases which continued to increase through the January 2021 surge. Student enrollment and Average Daily Membership (ADM) were anticipated to differ between the fall and spring semesters of 2021 school year as a result of the rise and fall of COVID-19 cases evident over time.

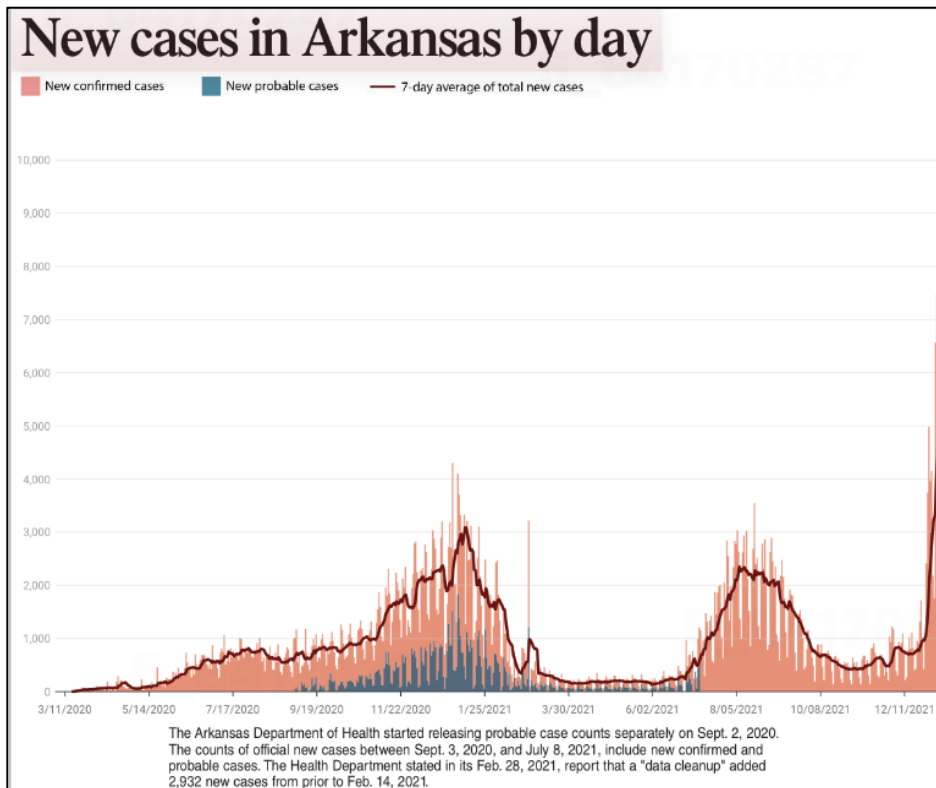


Figure 27 (duplicated). COVID-19 new cases by day from March 2020 through January 13, 2022.

To investigate the potential impact of the COVID-19 Pandemic on students the following analyses were conducted during the 2021 school year and the following months.

- Trends in student enrollment (year over year) and ADM (within year and year over year)
- Trends in Instructional Options within the 2021 school year
- Participation in state-required assessments in the 2021 school year

- Achievement and growth outcomes for the 2021 school year
- Graduation rates for the 2020 and 2021 school year

Enrollment. At the state level, Arkansas public schools experienced a drop in October 1 enrollment of 1.4% (6,492 students) with most students not returning in 2021 due to transfers out of state (17.2%), transfers to home school (15.5%), transfers to private school (2.8%), and other (4.7% for lack of attendance, Job Corps, dropped from an EC program, or no show). Comparison of enrollment and first quarter ADM ((Q1 ADM) to third quarter ADM (Q3 ADM) indicated some rebound in enrollment and attendance by Q3 ADM although more variation in the differences between the beginning and end of 2021 were evident across districts with gains and losses more spread out by Q3 ADM compared to prior years of the same quarter. Details are presented later in this report in the section *Summary of Enrollment, Q1ADM, and Q3 ADM*.

Instructional Options. Instructional options across Arkansas changed from the beginning of the year to the end of the year and differed by region as well as by region over time. At the state level for the October 1 enrollment count 63% of students were in onsite/traditional instruction, 25% were fully virtual/remote, and 13% were in hybrid/blended learning options. By the end of the year 70% of students were in onsite/traditional instruction, 18% were in virtual/ remote learning and 12% were in hybrid/ blended learning. Notably, there were differences at the regional level and regional changes in instructional options from the beginning of the year to the end of the year.

The northwest region consistently had the highest percentage of students enrolled in on-site/ traditional learning (73%) followed by the southwest region (70%), northeast region (65%), central region (49%) and southeast region (47%) at the beginning of the 2021 school year. By the end of the school year almost 2/3rds to 3/4ths of all students were in on-site/ traditional instruction with the northwest region (80%), southwest region (80%), and northeast region (71%) having the highest percent of students on-site and the central region (57%) and southeast region (56%) having almost 2/3rds of students in on-site instruction.

Asian and Black/ African American students were more likely to be enrolled in virtual learning (45% and 42%, respectively) compared to other race/ethnicity groups (ranging from 10% to 24%) enrolled in virtual learning at the beginning of the school year. By the end of the school year, students of all races/ethnicities had shifted to having more in on-site instruction and Asian and Black/ African American students were still enrolled in virtual learning at twice the proportion of students (38% and 29%, respectively) from other race ethnicities (ranging from 8% to 17%).

Males were slightly more represented in on-site/ traditional learning than females at the beginning (64% and 61, male and female, respectively) and end of the 2021 school year (72% and 69%, male and female, respectively).

Students qualifying for free or reduced lunch were enrolled in similar proportions to students paying for lunch in virtual or hybrid learning options (37% compared to 36%, respectively). English Learners were among those with the highest proportion of students enrolled in on-site/ traditional learning at the beginning (69%) and end of the year (79%). Two-thirds of students with disabilities (64%) were enrolled in on-site/ traditional learning at the beginning of the year and this increased to 73% by the end of the year.

Additional details regarding instructional options are reported in the section *Trends in Instructional Options within the 2021 School Year*.

Participation in State-Required Assessments. Arkansas tested 99% of students in 2018 and 2019 statewide in Grades 3-10 on the spring summative assessments which include the ACT Aspire and the Dynamic Learning Maps (alternate assessment). In 2021, Arkansas achieved 97.27% tested statewide on these assessments for all students. At the subgroup level only the Black/African American subgroup tested less than 95% and only in English/ Language Arts (ELA) coming in at 94.73% after school and district review. Students are required to complete the Reading, English, and Writing assessments to earn an ELA score so ELA had the lowest percent tested among the three subjects: ELA, math, and science. English Learners, Former English Learners, and Gifted and Talented students had the highest percent tested at levels exceeding 98%.

At the school level the percent of students tested varied considerably more in 2021 than in prior years with more schools testing less than 95% of all students and students in some of their subgroups. Ten times more schools tested less than 95%

of their All Students, Black/ African Americans and free/reduced lunch qualifying students. For the All Students group 13%, 11%, and 12% of schools did not meet 95% tested for ELA, math, and science in 2021 compared to less than 1% of all schools for all groups in 2019. While the percent tested is starkly different in 2021 compared to 2020 at the school level in AR for some schools, participation rates are very high in comparison to other states reporting participation for 2021. Details are provided in the section *Participation in State-Required Assessments in 2021*.

Achievement and Growth Outcomes for the 2021 School Year. The ACT Aspire average scaled scores were down compared to 2019 and in most cases were similar to the average scores Arkansas students earned in 2016 for Grades 3 through 10. Statewide, average reading scores were most similar to prior years declining, on average across grade levels, -0.86 scale score points. Grade 9 declined -0.42 scale score points, the lowest among all grade levels, and Grades 6 and 7 had the highest average decline of -1.12 and -1.11 scale score points, respectively. ELA had declines just slightly larger (-1.28), on average across grade levels, when compared to reading. Grade 3 had the biggest decline in ELA, in part due to a higher proportion of third graders who did not complete a scoreable writing test compared to the proportion in prior years. English (-1.27) saw a similar decline in average scale scores across grade levels as compared to ELA with Grade 3 declining the most.

Statewide average math scores exhibited the largest declines among all subjects with -1.82 scale score point decline across all grade levels. Grades 8 through 10 averaged over -2.00 declines. In science, the average decline across grade levels was 1.16 with Grades 3 and 6 declining the most (-1.42 and -1.47, respectively). STEM scores, which are a composite of math and science, exhibited a decline of -1.49 scale score points across grade levels.

To explore the changes in achievement and the impact on students' readiness levels we isolated two cohorts of students to compare typical change in achievement to the hypothesized COVID-19 Pandemic impacted change in achievement.

- Cohort 1: Students in Grades 3 through 8 in 2017 completing Grades 5 through 10 in 2019.
- Cohort 2: Students in Grades 3 through 8 in 2018 completing Grades 5 through 10 in 2021.

We then compared the changes in the percent of students meeting or exceeding grade-level readiness at each grade level in 2019 for Cohort 1 and in 2021 for Cohort 2. The net change in the percent of students ready or exceeding between the two cohorts demonstrates the proportion of Cohort 2 students losing ground relative to grade-level readiness in 2021 compared to Cohort 1 students' change in grade-level readiness in 2019 which we refer to as typical change. For Cohort 2, the net declines from 2019 to 2021 were estimated using the changes in percent meeting ready or exceeds in Cohort 1 from 2017 to 2019 with changes for Cohort 1 by 2019 representing estimated typical changes in a non-pandemic year.

In ELA, Grades 3 and 4 had the largest net declines of -10.5 and -12.4 percentage points in the percent of students meeting grade-level readiness cut scores. The average loss in percent ready or exceeding for Cohort 2, accounting for typical gain/loss as estimated by Cohort 1, was -9.35 percentage points. Cohort 2 had the largest decreases in math in the percent of students meeting grade-level readiness cut scores with an average -10.35 percentage points drop. Grade 5 students who started in Grade 3 in 2019 had the steepest drops with -18.50 percentage point decline in the percent ready or exceeding grade level standards in Grade 5. Grades 10 (-12.20) and 6 (-10.80) had the next largest declines. Science had an average percentage point decline of -5.38. Grades 3 and 4 had the largest percentage point loss in percent of student ready or exceeding in science (-9.70 and -7.0, respectively).

These findings were validated in a separate analysis of score decline conducted by ACT on behalf of the Division of Elementary and Secondary Education. ACT used a propensity score matching methodology to establish similar samples of students for 2019 and 2020 on initial achievement, gender, race/ethnicity, disability, economic, and English learner characteristics. They found that scale score declines were evident at all grade levels relative to 2019 with the greatest declines in math. Using a composite score they determined that scale score declines were approximately 0.25 standard deviations for Grades 3 through 6 with declines in Grades 7, 9, and 10 at approximately 0.17 standard deviations. Declines at Grade 8 and on the Grade 11 ACT were the lowest at approximately 0.10 standard deviation units.

For subgroups of students their analysis indicated that composite score declines were less severe for students with disabilities/ English Learners' scores declined less than English-only students except in Grades 3, 4, and 8. In general,

white students had the largest declines in ACT Aspire scores except at Grades 3 and 4 where African American students had approximately 0.07 standard deviation larger decline and 0.05 standard deviation larger decline for Grades 3 and 4, respectively, compared to white students.

Achievement at the district and school levels exhibited greater variation in 2021. There were districts and schools that exhibited less severe declines, and—in some cases schools and districts demonstrated gains from 2019 to 2021. In fact, 12 percent of schools improved their ESSA School Index score from 2019 to 2021. The reverse is also true supporting the hypothesis that *how* districts and schools responded to disruptions and supported learning differed and resulted in different outcomes for students. Investing how districts and schools responded to support learning and curating the strategies that were successful in growing students in achievement might inform other schools in Arkansas. This work is currently underway at the Division of Elementary and Secondary Education.

Growth in achievement was of interest in addition to aggregate statistics regarding the achievement level of students in Arkansas in 2021. The growth metric used for federal and state accountability is a longitudinal student growth model that nests students scores within each student within their grade level state wide. Students' score histories are run through a multi-level model to produce estimates of achievement for the current year (predicted score) and residuals (difference between predicted and actual score in current year). This model is called a value-added model as it controls for student-level factors that are not controlled by the school (race/ethnicity, economic status, disability status, English Learner status). Further, by using score histories each student's prior achievement trajectory improves the estimate or predicted score. Students at all points on the achievement continuum are expected to grow in achievement based on how they have achieved over up to four years of prior achievement scores.

School growth scores are the average of all full-academic year students' scores in the school and indicate whether—on average—students are meeting or exceeding expected growth in achievement or losing ground relative to expected growth. A score of 80 indicates that, on average, students in the school are meeting expected growth. Scores above 80 indicate more students are meeting or exceeding expected growth. Scores below 80 indicate students, on average, are not meeting expected growth. The further above or below 80, the greater the average gain or loss relative to expected growth.

School-level growth scores for 2021 exhibit much greater variation in students' growth in achievement among schools. That means that how much students grew relative to how much they were expected to grow, on average, differed a lot more in 2021 than in any prior year. Most of the increased variability is accounted for at the elementary grade span.

Schools in the elementary grade span had an average value-added growth score of 80.26 with schools' average scores ranging from 61 to 92 in 2021—a 31 score point spread. In prior years the spread of schools' average value-added growth scores was 18 score points with a range of 71 to 89 in 2019 and a spread of 21 score points with a range of 69 to 90 in 2018. At the middle school grade span the average value-added growth score of 80.38 is typical compared to prior years as is the high school grade span average value-added growth score of 79.62.

Regarding achievement and growth in achievement, it is evident that how districts and schools responded to ensure continuity of learning varied more than in typical years as evidenced by the greater differences in achievement and growth metrics in 2021 compared to prior years.

Graduation Rates for the 2020-21 School Year. Graduation rates for the 2021 4-year adjusted cohort graduation rate remained relatively flat at 88.5% in 2021 compared to 88.8% in 2020. The 2021 5-year adjusted cohort graduated at a rate of 90.2% compared to 89.0% for the 2020 5-year adjusted cohort. In a year where the expected impacts of the COVID-19 pandemic have been much anticipated to be negative, it is notable that the 2021 4-Year and 5-Year Graduation Rates demonstrate that Arkansas students graduated at similar rates in their 4th year as in 2020, and for the 5-Year adjusted cohort, more students were able to earn their high school diploma given this fifth year.

Most race/ethnicity subgroups demonstrated similar trends as the All Students group except for African American and Hawaiian Pacific Island students who demonstrated nominal upticks in rates in 2021 compared to 2020. Notably, some of the most at-risk populations such as homeless students and those in foster care demonstrated a relatively stable rate in 2021 during the COVID 19 pandemic. Students who were military dependents and students who were migrant had the largest declines in graduation rate. The other subgroups generally followed the overall pattern for all students.

The remainder of this report includes more detailed reporting of the statistics summarized in this overview as indicated in the table of contents.

Enrollment and ADM Trends 2016 – 2021

The school year 2020-2021 (SY2021) is hypothesized to have impacted students and families in such a way as to impact student enrollment and attendance differently in SY2021 than in prior years. A multi-year comparison of Quarter 1 (Q1), Quarter 3 (Q3) Average Daily Membership (ADM), and October 1 enrollment (enrollment) was completed to inform the extent to which SY2021 might differ from prior years. We compared Q1 ADM, Q3 ADM, and enrollment for 2016 through 2021. We calculated summary statistics for each year and compared the distribution of districts on Q1 ADM, Q3 ADM, and enrollment. We removed the EXCEL Center, the Division of Youth Services, School for the Deaf, and School for the Blind from the calculations.

After summarizing actual values, we calculated the percentage change, year-over-year, in District ADM for first and third quarters. The percentage change represents differences between current year and the immediate prior year for same quarter.

- Negative values indicate a lower ADM compared to the prior year for the same quarter.
- Positive values indicate a higher ADM compared to the prior year for the same quarter.
- A value of zero indicates no change over the prior year for the same quarter.

$$\text{First Quarter}_{2021} - \text{First Quarter}_{2020} = \text{Percent Change in First Quarter ADM}_{2021}$$

$$\text{Third Quarter}_{2021} - \text{Third Quarter}_{2020} = \text{Percent Change in Third Quarter ADM}_{2021}$$

Percentages in smaller districts are more volatile than percentages in larger districts. Ten students in a district with 350 students can result in a 3% change; whereas a 10-student difference in a 1000 student district is a 1% change. This is important to keep in mind when reviewing the percentage change in ADM and enrollment.

To reduce the noise in the data created by a small number of districts that experienced greater than 50% change in these measures the charts in the section on percentage change year-over-year *exclude* districts with greater than 50% change from one year to the next. These districts are listed separately in the Appendix so that their changes may be interpreted in context. For example, Arkansas Virtual Charter School and Arkansas Connections Academy increased enrollment by over 50%. The specific context for these changes will be addressed later in this report.

Summary of Enrollment, Q1 ADM, and Q3 ADM State-Level

We used SIS cycle 2 student enrollment which we aggregated by state to get grade level counts and by district to get district enrollment counts.

Table 1. Change in Arkansas Public School October 1 Enrollment Year Over Year

| YEAR | Number of Students | Change in Number of Students Over Previous Year | Percent Change in Number of Students Over Previous Year |
|------|--------------------|---|---|
| 2016 | 474455 | . | . |
| 2017 | 475156 | 701 | 0.1 |
| 2018 | 476245 | 1089 | 0.2 |
| 2019 | 475927 | -318 | -0.1 |
| 2020 | 477122 | 1195 | 0.3 |
| 2021 | 470630 | -6492 | -1.4 |

Students dropping from Arkansas’s public schools fall into 4 predominant categories (excluding transferring to another school in Arkansas) as indicated in Table 2. Table 2 provides the trend in these predominant drop codes for 2019 – 2021.

Table 2. Predominant* Drop/Withdrawal Codes for October 1, 2020 Enrollment

| Drop/Withdrawal Code | Percent of Students Dropped/Withdrawn | | |
|--|---------------------------------------|------|------|
| | 2021 | 2020 | 2019 |
| 14- Other (Lack of Attendance, Job Corps, Dismissed from EC Program, No Shows) | 4.7 | 7.9 | 9.0 |
| 16- Transfer to Private School, | 2.8 | 2.0 | 2.0 |
| 17- Transfer to Home School | 15.5 | 5.7 | 5.1 |
| 18- Transfer Out of State | 17.2 | 20.0 | 19.4 |

*Of the 19 drop/withdrawal codes typically the code for transferring to another school in Arkansas accounts for 60% or more of students listed as dropped from a particular school. Among the remaining codes only codes 14, 16,17, and 18 have more than 1% of students with the code.

District-Level Summary

Arkansas’s districts vary in enrollment size as is evident in Figure 1. Most districts are under 6,600 students in enrollment with 11 districts consistently above this point. This pattern was relatively stable over the past 6 years.

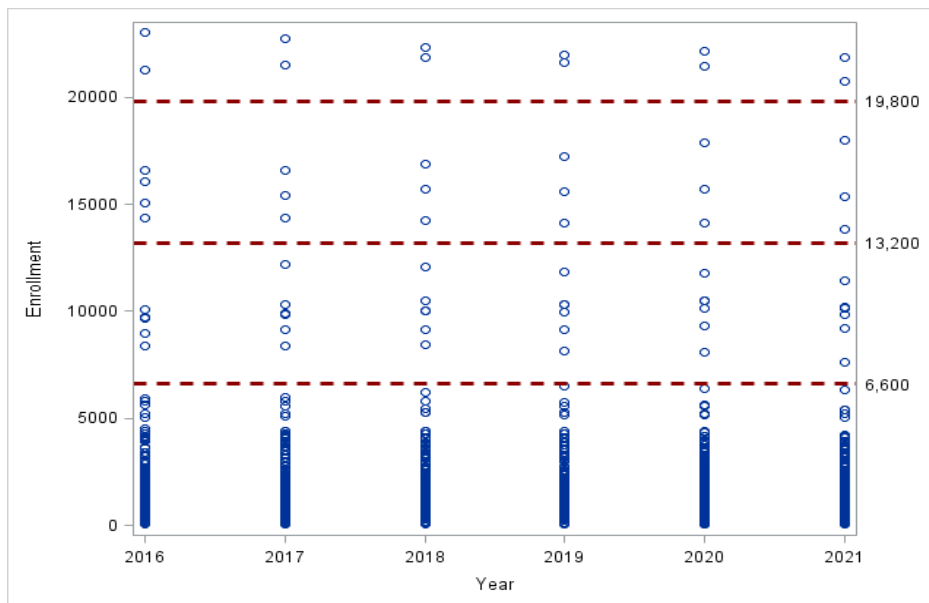


Figure 1. Distribution of district October 1 enrollment by year.

An overview of the 2016 through 2021 enrollment, Q1 ADM, Q3 ADM, and October 1 enrollment are visualized side-by-side in Figure 2 and the state-level summary statistics are provided in Table 1. Ninety percent of all districts are at or below 3,814 in enrollment over the six years examined as indicated by the box plots in Figure 2. Q1 and Q3 ADM are comparable to enrollment each year except for the Little Rock School District in 2016-2018. The enrollment in recent years appears larger than Q1 and Q3 ADM in 2016-2018 because the ADM for magnet schools was not present in the ADM files provided to us for Little Rock School District for these three years.

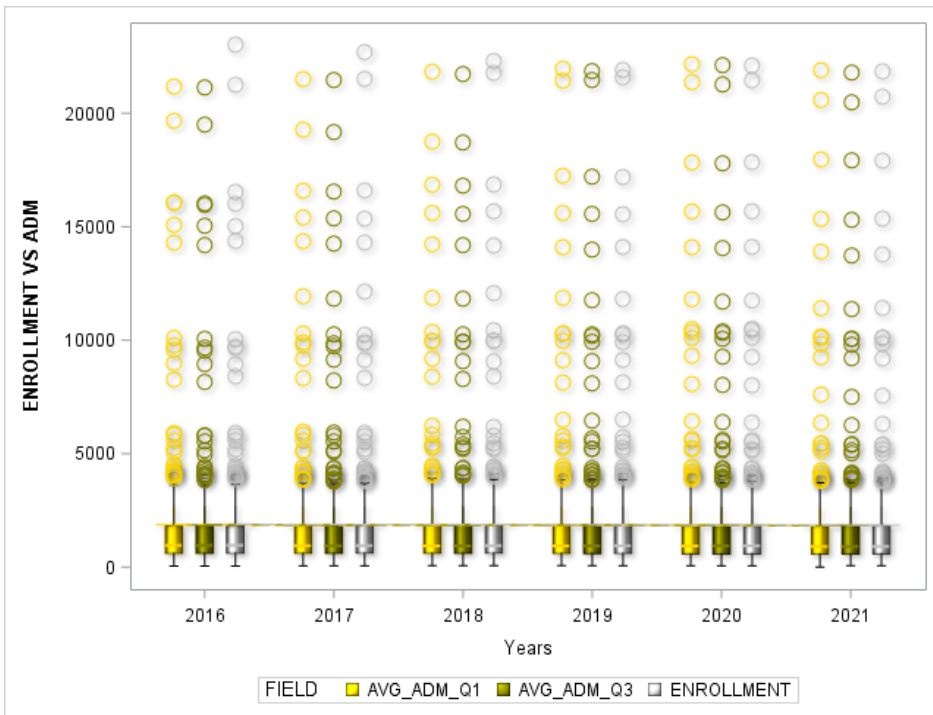


Figure 2. Distribution of district average Q1 ADM, average Q3 ADM, and October 1 enrollment 2016-2021.

Arkansas has 11 districts with enrollment and ADM over 6,600 in 2021. These districts and their 2021 enrollment are listed in Table 3 for reference.

Table 3. Districts with Enrollment Greater than 6,600

| DISTRICT LEA and NAME | 2021 Enrollment | Region |
|--------------------------------|-----------------|-----------|
| 0401000-BENTONVILLE | 17,970 | Northwest |
| 0405000-ROGERS | 15,355 | Northwest |
| 6601000-FORT SMITH | 13,839 | Northwest |
| 7203000-FAYETTEVILLE | 10,151 | Northwest |
| 7207000-SPRINGDALE | 21,882 | Northwest |
| 2301000-CONWAY | 98,49 | Central |
| 4304000-CABOT | 10,171 | Central |
| 6001000-LITTLE ROCK | 20,745 | Central |
| 6002000-NORTH LITTLE ROCK | 7,610 | Central |
| 6003000-PULASKI COUNTY SPECIAL | 11,424 | Central |
| 6303000-BRYANT | 9,214 | Central |

Table 4 includes the summary statistics that describe Q1 ADM, Q3 ADM, and Enrollment for all districts in Arkansas. This includes the 11 largest districts which skew the average enrollment for Arkansas. Thus, the medians, minimums, and maximums are included in the table to enable comparisons of the central tendency of the distributions from year to year.

Table 4. Multi-year Summary of Q1 ADM, Q3 ADM, and October 1 Enrollment

| | Number of Districts | | | Median | | | Minimum | | | Maximum | | |
|------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT |
| 2016 | 251 | 251 | 251 | 957.12 | 955.56 | 961 | 44.27 | 46.33 | 44 | 21,176.36 | 21,135.35 | 23,026.00 |
| 2017 | 254 | 254 | 254 | 944.75 | 939.80 | 948 | 54.52 | 57.04 | 56 | 21,466.85 | 21,480.08 | 22,755.00 |
| 2018 | 254 | 254 | 254 | 932.85 | 931.36 | 944 | 64.20 | 63.40 | 64 | 21,792.91 | 21,761.94 | 22,334.00 |
| 2019 | 257 | 257 | 257 | 934.05 | 931.18 | 941 | 66.36 | 61.85 | 59 | 21,915.05 | 21,877.88 | 21,962.00 |
| 2020 | 259 | 259 | 259 | 930.85 | 935.89 | 941 | 59.23 | 57.62 | 58 | 22,130.94 | 22,107.57 | 22,164.00 |
| 2021 | 259 | 256 | 256 | 904.45 | 901.80 | 907 | 0* | 63.43 | 61 | 21,851.91 | 21,804.61 | 21,882.00 |

*Three district LEA numbers were listed with 0 ADM in Q1 file likely due to listing under old LEA numbers. For example, HAAS Hall Bentonville appeared under its old LEA number in Q1 ADM as 0 because the enrollment, Q1 ADM, and Q3 ADM were counted in the Washington County HAAS Hall District LEA number effective SY 2021.

The charts in Figures 3-5 illustrate how closely the Q1 ADM, Q3 ADM, and enrollment overlap each other each year for most districts as would be expected. We used a density curve to exhibit the proportion of schools at Q1 ADM, Q3 ADM, and enrollment levels. You can ignore the portions of the curve to the left of the zero line-these are automatically generated by the computer to ‘smooth’ the curve and have no meaning. These figures exclude the 11 largest districts to enable any small differences to be more detectable. *Among all the years, SY2021 shows slightly more variation among the three statistics. We will dig deeper into those variations in SY 2021.*

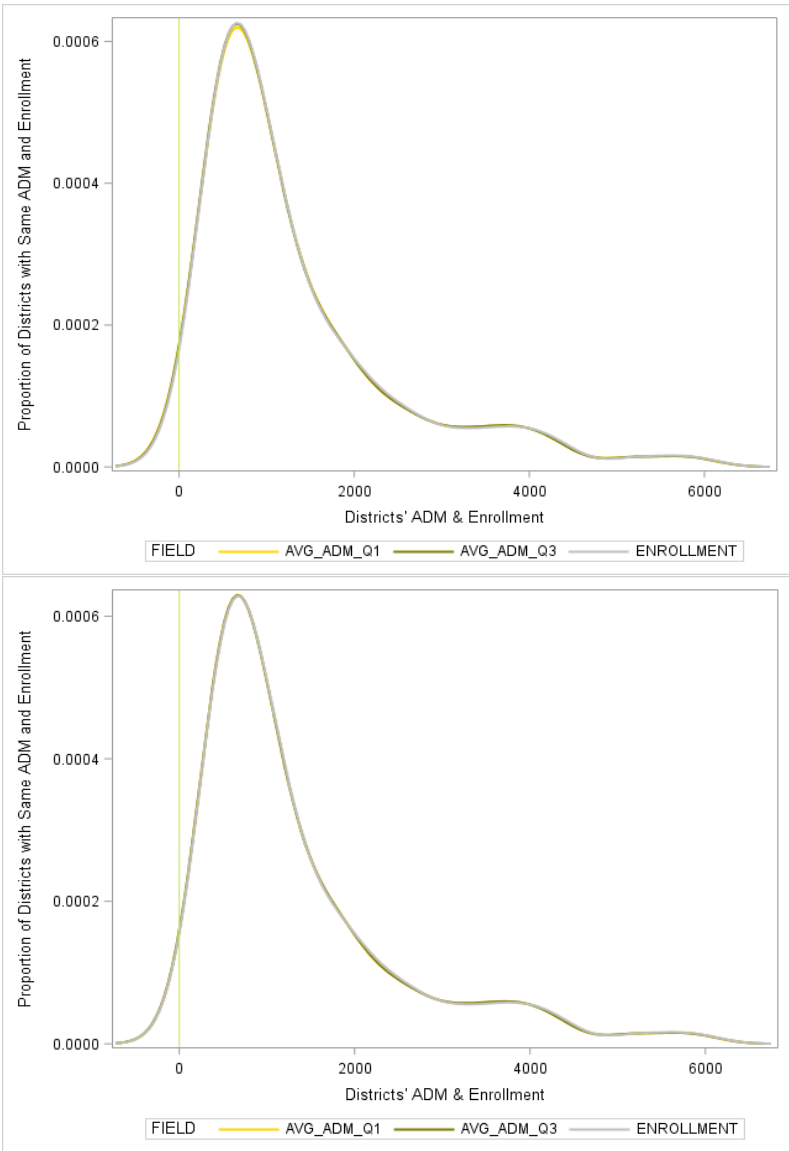


Figure 3. 2016 (left) and 2017 (right) enrollment, Q1 ADM, Q3 ADM for districts 0 to 6,600.

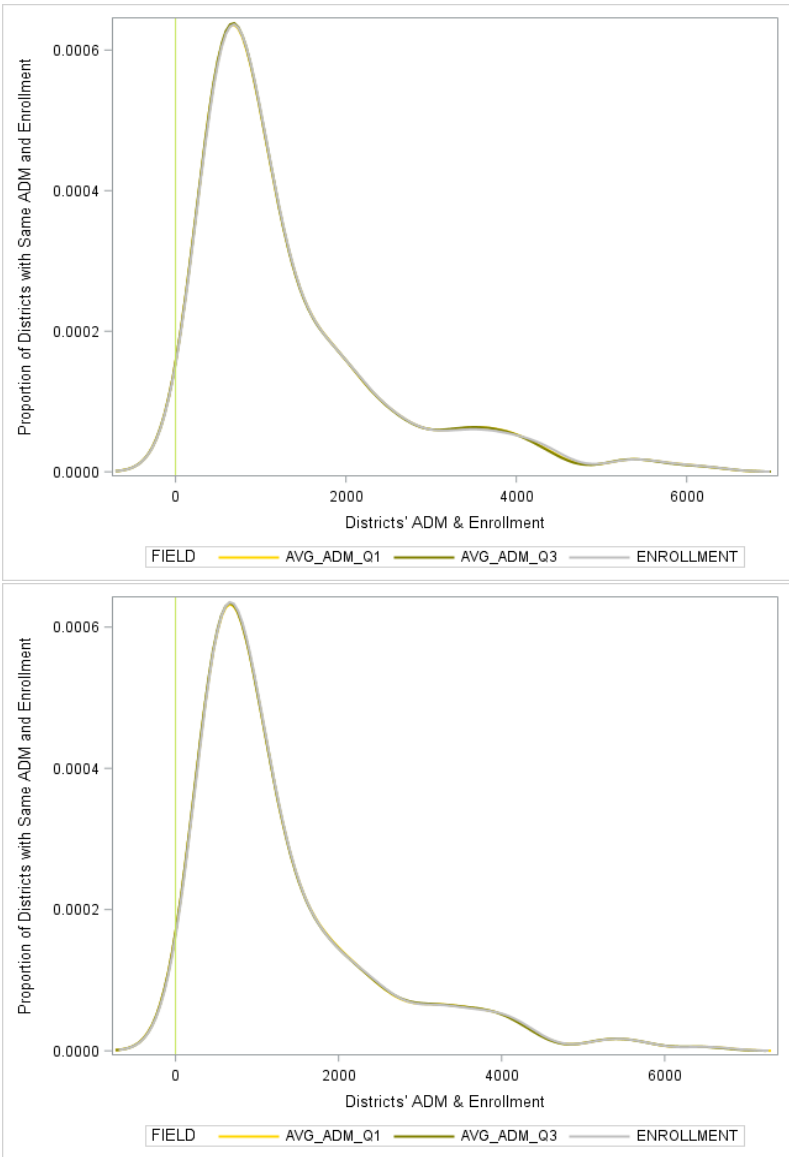


Figure 4. 2018 (left) and 2019 (right) enrollment, Q1 ADM, Q3 ADM for districts 0 to 6,600.

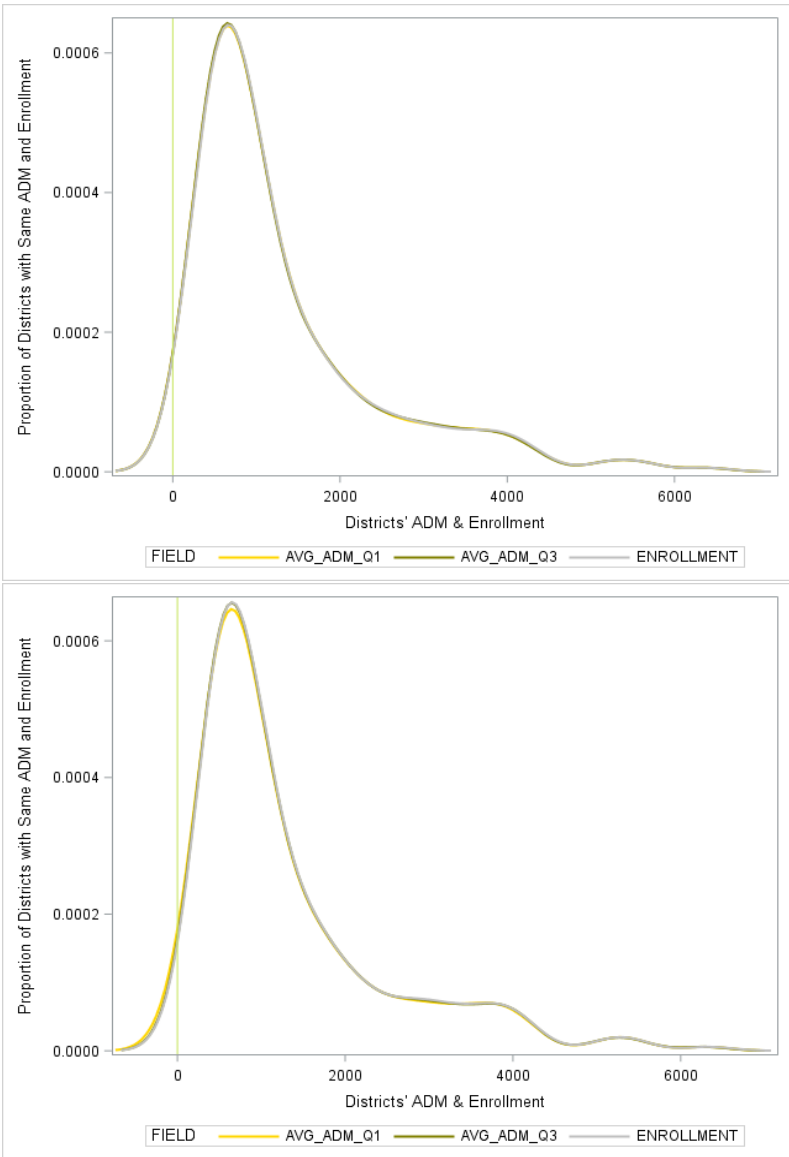


Figure 5. 2020 (left) and 2021 (right) enrollment, Q1 ADM, Q3 ADM for districts 0 to 6,600.

Within-Year Changes Q1 to Q3 ADM

We examined the within-year changes for each school year 2016-2021 by subtracting Q1 ADM from Q3 ADM and dividing by Q1 ADM to get percentage of ADM change from Q1 to Q3. Negative values indicate lower Q3 ADM compared to Q1 and positive values indicate higher Q3 ADM compared to Q1. Table 3 summarizes the findings. Note that in all years, Q3 ADM was lower than Q2. The average percentage change is lowest in SY 2021. The districts with extreme increases or decreases are typically charter high schools that tend to serve more at-risk students.

Table 5. Percentage Change in ADM from Q1 to Q3 2016-2021

| | N | Mean | Std Dev | Minimum | Maximum |
|------------------------|-----|-------|---------|---------|---------|
| Q1Q3_2021Change | 256 | -0.20 | 1.72 | -9.76 | 14.79 |
| Q1Q3_2020Change | 254 | -0.28 | 1.06 | -5.97 | 6.76 |
| Q1Q3_2019Change | 252 | -0.28 | 1.30 | -12.43 | 6.95 |
| Q1Q3_2018Change | 252 | -0.29 | 1.71 | -22.27 | 6.53 |
| Q1Q3_2017Change | 249 | -0.25 | 0.99 | -7.61 | 4.61 |
| Q1Q3_2016Change | 249 | -0.52 | 2.04 | -22.07 | 6.14 |

We plotted the Q1 ADM by Q3 ADM to give a more detailed picture of the relative stability of ADM within the same year. Figures 6-8 are the scatterplots for each of the past three school years for comparison. Note that there may be an occasional district with a larger increase or decrease but most are close enough to demonstrate that Q1 ADM is approximately equal to Q3 ADM. Districts under 6,600 students are summarized on the left chart and the largest districts (greater than 6,600 students are in the chart on the right for each year. Within-year changes for SY 2021 are like the within-year changes for districts' ADM in other years.

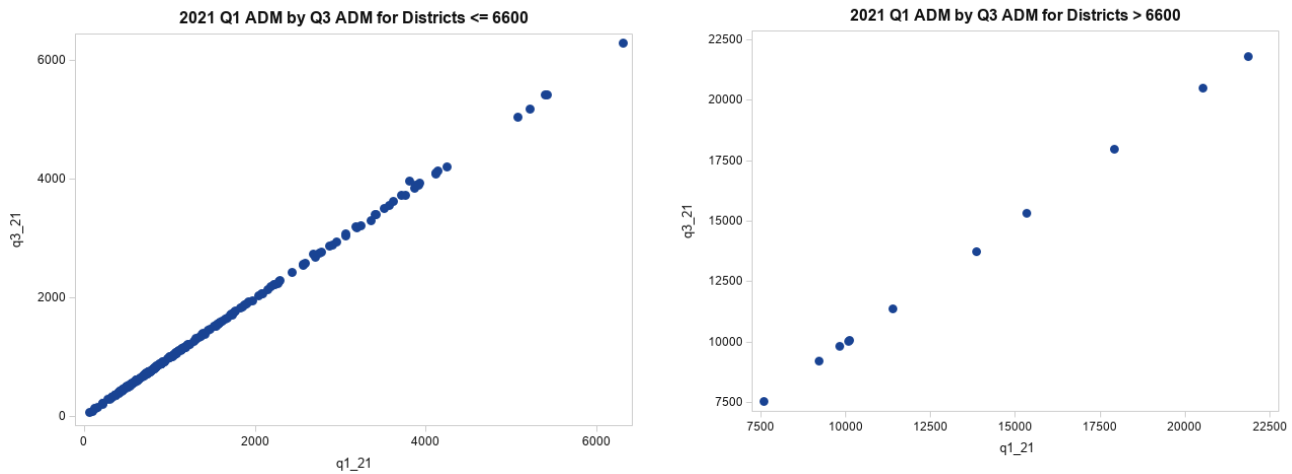


Figure 6. 2021 Q1 ADM by Q3 ADM for districts with less than or equal to 6600 and districts greater than 6600.

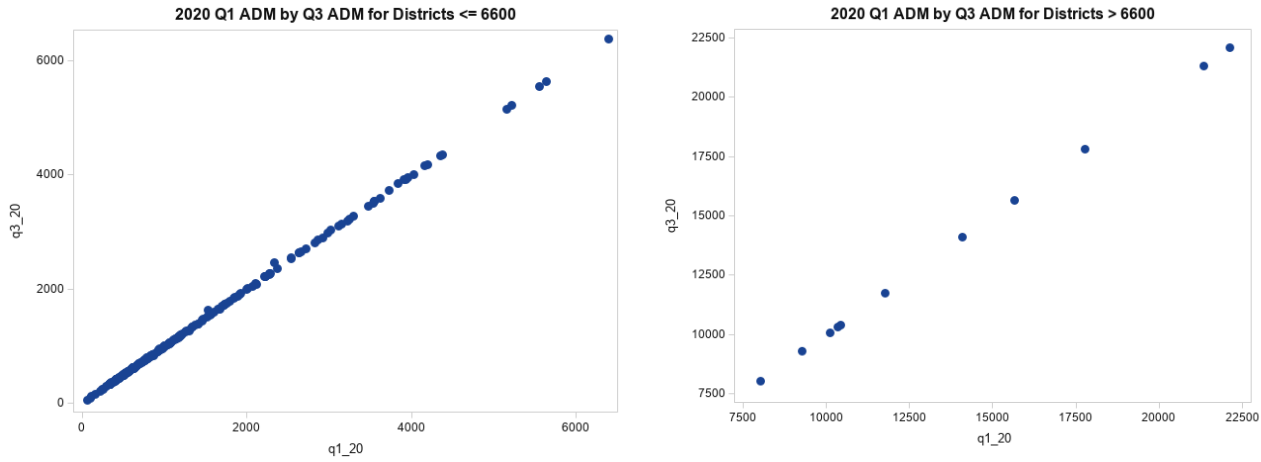


Figure 7. 2020 Q1 ADM by Q3 ADM for districts with less than or equal to 6600 and districts greater than 6600.

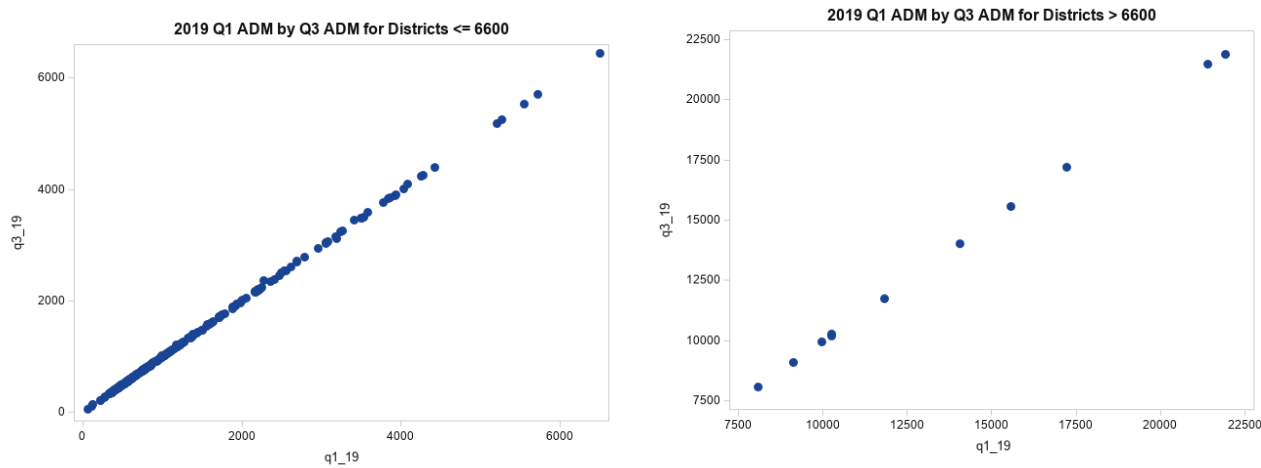


Figure 8. 2019 Q1 ADM by Q3 ADM for districts with less than or equal to 6600 and districts greater than 6600.

Within-Year Changes in Demographics of Students

The population of students was relatively stable within year when considering overall numbers of students and the typical pattern of lower enrollment in Q3 compared to Q1. Arkansas gained back some student enrollment in Q3 of 2021 that offset some of the typical within-year drop in enrollment from Q1 to Q3 leading to the lowest difference between Q1 and Q3 compared to prior years (Table 3). How did the demographics of students change and/or shift among districts during the 2021 school year? Did districts, on average, retain the same representativeness of the state student population with regards to major race/ethnicity categories, socio-economic status of students, English learner status, and special education services status? Were there shifts among regions?

To explore the answer to these questions the percentage of students in each of these demographic categories out of the state student Q1 (cycle 2) population and Q3 (cycle 6) population were calculated. We call this the ‘district share’ of total enrollment for each of these demographic categories. We recognize that the denominator for Q1 and Q3 are different; thus, we use the enrollment at Q1 (Cycle 2) and Q3 (Cycle 6), respectively, as the denominator to look at whether there were demographic shifts among districts in Arkansas in 2021.

- Of the 472,100 students actively enrolled in districts in Cycle 2, excluding Resident Codes 1, 2, 4, and 5 (homeschool codes for partial enrollment), what percentage of students in districts were Black/African American, Hispanic, White, Multi-racial, economically disadvantaged, English Learners, and/or students with disabilities? (District share in Cycle 2)

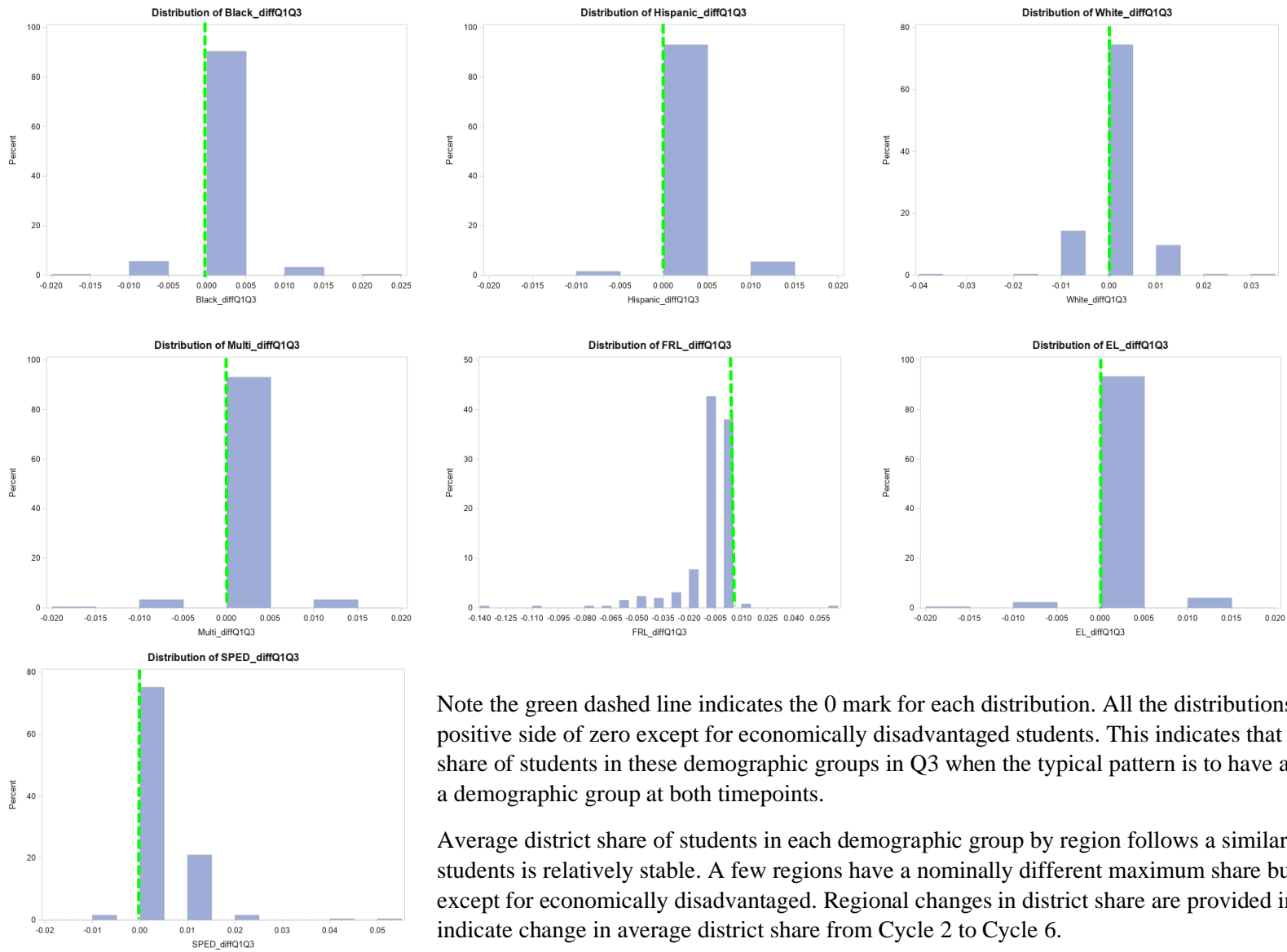
- Of the 468,638 students actively enrolled in districts in Cycle 2, excluding Resident Codes 1, 2, 4, and 5 (homeschool codes for partial enrollment), what percentage of students in districts were Black/African American, Hispanic, White, Multi-racial, economically disadvantaged, English Learners, and/or students with disabilities? (District share in Cycle 6)
- Did this percentage shift in districts from Cycle 2 to Cycle 6 (Difference in Share from Cycle 2 to Cycle 6)? To what extent?

In Table 6 you can see there are slight differences in the maximum share for some groups and the only mean difference is for economically disadvantaged students where, on average, districts had a slightly lower share of economically disadvantaged students in Cycle 6 compared to Cycle 2.

Table 6. Descriptive Statistics for District Share of Demographics Cycle 2 and 6

| Group | Cycle | N | Mean | Std Dev | Minimum | Maximum |
|-----------------------------------|--------------|----------|-------------|----------------|----------------|----------------|
| Black/ African American | Cycle 2 | 248 | 0.08 | 0.22 | 0.00 | 2.66 |
| | Cycle 6 | 248 | 0.08 | 0.22 | 0.00 | 2.65 |
| Hispanic | Cycle 2 | 257 | 0.05 | 0.19 | 0.00 | 2.22 |
| | Cycle 6 | 257 | 0.05 | 0.19 | 0.00 | 2.23 |
| White | Cycle 2 | 258 | 0.23 | 0.30 | 0.00 | 2.70 |
| | Cycle 6 | 258 | 0.23 | 0.30 | 0.00 | 2.71 |
| More than one race | Cycle 2 | 244 | 0.01 | 0.03 | 0.00 | 0.27 |
| | Cycle 6 | 245 | 0.01 | 0.03 | 0.00 | 0.27 |
| Economically Disadvantaged | Cycle 2 | 258 | 0.25 | 0.40 | 0.01 | 3.42 |
| | Cycle 6 | 258 | 0.24 | 0.38 | 0.01 | 3.28 |
| English Learners | Cycle 2 | 227 | 0.04 | 0.14 | 0.00 | 1.64 |
| | Cycle 6 | 231 | 0.04 | 0.14 | 0.00 | 1.62 |
| Students with Disabilities | Cycle 2 | 257 | 0.05 | 0.08 | 0.00 | 0.61 |
| | Cycle 6 | 258 | 0.05 | 0.08 | 0.00 | 0.66 |

To understand the change in districts' share of students from each demographic category from Q1 to Q3 a difference score was calculated by subtracting Cycle 2 percent share for each district from Cycle 6 percent share for each district. Positive changes in the percent indicate where districts increased in the share of students from a demographic group and negative changes in percent indicate where districts decreased in the share of students from a particular demographic group, relative to the Arkansas student population at Q1 and Q3. The distribution of the changes in districts' share from Cycle 2 to Cycle 6 are given in Figure 9.



Note the green dashed line indicates the 0 mark for each distribution. All the distributions are predominantly on the positive side of zero except for economically disadvantaged students. This indicates that most districts increased the share of students in these demographic groups in Q3 when the typical pattern is to have almost the identical share of a demographic group at both timepoints.

Average district share of students in each demographic group by region follows a similar pattern where the share of students is relatively stable. A few regions have a nominally different maximum share but most means are identical except for economically disadvantaged. Regional changes in district share are provided in Table 7. Yellow cells indicate change in average district share from Cycle 2 to Cycle 6.

Figure 9. Changes in districts' share of students.

Table 7. Average District Share of Students in Demographic Groups by Region

| Black/ African American | | Number of Districts | Mean | Std Dev | Minimum | Maximum |
|--------------------------------|---------|----------------------------|-------------|----------------|----------------|----------------|
| 1. Northwest | Cycle 2 | 72 | 0.02 | 0.05 | 0.00 | 0.32 |
| | Cycle 6 | 72 | 0.02 | 0.05 | 0.00 | 0.32 |
| 2. Northeast | Cycle 2 | 64 | 0.06 | 0.15 | 0.00 | 0.81 |
| | Cycle 6 | 64 | 0.06 | 0.15 | 0.00 | 0.82 |
| 3. Central | Cycle 2 | 51 | 0.19 | 0.42 | 0.00 | 2.66 |
| | Cycle 6 | 51 | 0.19 | 0.42 | 0.00 | 2.65 |
| 4. Southwest | Cycle 2 | 37 | 0.07 | 0.12 | 0.00 | 0.45 |
| | Cycle 6 | 37 | 0.07 | 0.11 | 0.00 | 0.45 |
| 5. Southeast | Cycle 2 | 24 | 0.09 | 0.06 | 0.00 | 0.23 |
| | Cycle 6 | 24 | 0.09 | 0.06 | 0.00 | 0.24 |
| Hispanic | | | | | | |
| 1. Northwest | Cycle 2 | 77 | 0.10 | 0.33 | 0.00 | 2.22 |
| | Cycle 6 | 77 | 0.10 | 0.33 | 0.00 | 2.23 |
| 2. Northeast | Cycle 2 | 67 | 0.02 | 0.03 | 0.00 | 0.19 |
| | Cycle 6 | 67 | 0.02 | 0.03 | 0.00 | 0.19 |
| 3. Central | Cycle 2 | 51 | 0.06 | 0.11 | 0.00 | 0.69 |
| | Cycle 6 | 51 | 0.06 | 0.11 | 0.00 | 0.68 |
| 4. Southwest | Cycle 2 | 38 | 0.03 | 0.05 | 0.00 | 0.30 |
| | Cycle 6 | 38 | 0.03 | 0.06 | 0.00 | 0.30 |
| 5. Southeast | Cycle 2 | 24 | 0.02 | 0.02 | 0.00 | 0.08 |
| | Cycle 6 | 24 | 0.02 | 0.02 | 0.00 | 0.08 |
| White | | | | | | |
| 1. Northwest | Cycle 2 | 77 | 0.31 | 0.41 | 0.01 | 2.70 |
| | Cycle 6 | 77 | 0.30 | 0.41 | 0.01 | 2.71 |
| 2. Northeast | Cycle 2 | 67 | 0.20 | 0.15 | 0.00 | 0.69 |
| | Cycle 6 | 67 | 0.20 | 0.15 | 0.00 | 0.68 |
| 3. Central | Cycle 2 | 52 | 0.30 | 0.38 | 0.00 | 1.78 |
| | Cycle 6 | 52 | 0.30 | 0.38 | 0.00 | 1.78 |
| 4. Southwest | Cycle 2 | 38 | 0.13 | 0.08 | 0.01 | 0.32 |
| | Cycle 6 | 38 | 0.13 | 0.08 | 0.01 | 0.33 |
| 5. Southeast | Cycle 2 | 24 | 0.09 | 0.07 | 0.00 | 0.20 |
| | Cycle 6 | 24 | 0.09 | 0.07 | 0.00 | 0.21 |

Table 7 (continued). Average District Share of Students in Demographic Groups by Region

| | | Number of Districts | Mean | Std Dev | Minimum | Maximum |
|-----------------------------------|---------|---------------------|------|---------|---------|---------|
| More than one race. | | | | | | |
| 1. Northwest | Cycle 2 | 75 | 0.02 | 0.04 | 0.00 | 0.27 |
| | Cycle 6 | 75 | 0.02 | 0.04 | 0.00 | 0.27 |
| 2. Northeast | Cycle 2 | 61 | 0.01 | 0.01 | 0.00 | 0.07 |
| | Cycle 6 | 61 | 0.01 | 0.01 | 0.00 | 0.06 |
| 3. Central | Cycle 2 | 48 | 0.02 | 0.03 | 0.00 | 0.13 |
| | Cycle 6 | 49 | 0.02 | 0.03 | 0.00 | 0.13 |
| 4. Southwest | Cycle 2 | 37 | 0.01 | 0.01 | 0.00 | 0.04 |
| | Cycle 6 | 37 | 0.01 | 0.01 | 0.00 | 0.04 |
| 5. Southeast | Cycle 2 | 23 | 0.00 | 0.01 | 0.00 | 0.02 |
| | Cycle 6 | 23 | 0.00 | 0.00 | 0.00 | 0.01 |
| Economically Disadvantaged | | | | | | |
| 1. Northwest | Cycle 2 | 77 | 0.27 | 0.49 | 0.01 | 3.34 |
| | Cycle 6 | 77 | 0.26 | 0.48 | 0.01 | 3.26 |
| 2. Northeast | Cycle 2 | 67 | 0.21 | 0.23 | 0.01 | 1.34 |
| | Cycle 6 | 67 | 0.20 | 0.22 | 0.01 | 1.30 |
| 3. Central | Cycle 2 | 52 | 0.37 | 0.56 | 0.01 | 3.42 |
| | Cycle 6 | 52 | 0.35 | 0.54 | 0.01 | 3.28 |
| 4. Southwest | Cycle 2 | 38 | 0.19 | 0.19 | 0.06 | 0.87 |
| | Cycle 6 | 38 | 0.18 | 0.19 | 0.06 | 0.86 |
| 5. Southeast | Cycle 2 | 24 | 0.17 | 0.08 | 0.06 | 0.33 |
| | Cycle 6 | 24 | 0.16 | 0.08 | 0.05 | 0.32 |
| English Learners | | | | | | |
| 1. Northwest | Cycle 2 | 63 | 0.08 | 0.26 | 0.00 | 1.64 |
| | Cycle 6 | 67 | 0.07 | 0.25 | 0.00 | 1.62 |
| 2. Northeast | Cycle 2 | 59 | 0.01 | 0.02 | 0.00 | 0.12 |
| | Cycle 6 | 59 | 0.01 | 0.02 | 0.00 | 0.12 |
| 3. Central | Cycle 2 | 47 | 0.04 | 0.09 | 0.00 | 0.60 |
| | Cycle 6 | 47 | 0.04 | 0.09 | 0.00 | 0.60 |
| 4. Southwest | Cycle 2 | 36 | 0.02 | 0.04 | 0.00 | 0.19 |
| | Cycle 6 | 36 | 0.02 | 0.04 | 0.00 | 0.19 |
| 5. Southeast | Cycle 2 | 22 | 0.01 | 0.01 | 0.00 | 0.04 |
| | Cycle 6 | 22 | 0.01 | 0.01 | 0.00 | 0.04 |

Table 7 (continued). Average District Share of Students in Demographic Groups by Region

| | | Number of Districts | Mean | Std Dev | Minimum | Maximum |
|-----------------------------------|---------|---------------------|------|---------|---------|---------|
| Students with Disabilities | | | | | | |
| 1. Northwest | Cycle 2 | 76 | 0.06 | 0.10 | 0.00 | 0.48 |
| | Cycle 6 | 77 | 0.06 | 0.10 | 0.00 | 0.49 |
| 2. Northeast | Cycle 2 | 67 | 0.04 | 0.04 | 0.01 | 0.21 |
| | Cycle 6 | 67 | 0.05 | 0.04 | 0.00 | 0.22 |
| 3. Central | Cycle 2 | 52 | 0.08 | 0.11 | 0.00 | 0.61 |
| | Cycle 6 | 52 | 0.08 | 0.12 | 0.00 | 0.66 |
| 4. Southwest | Cycle 2 | 38 | 0.03 | 0.02 | 0.01 | 0.10 |
| | Cycle 6 | 38 | 0.03 | 0.02 | 0.01 | 0.11 |
| 5. Southeast | Cycle 2 | 24 | 0.03 | 0.01 | 0.01 | 0.04 |
| | Cycle 6 | 24 | 0.03 | 0.01 | 0.01 | 0.04 |
| 1. Northwest | Cycle 2 | 76 | 0.06 | 0.10 | 0.00 | 0.48 |
| | Cycle 6 | 77 | 0.06 | 0.10 | 0.00 | 0.49 |

Crossing the share of students in Arkansas within each race/ethnicity group by economic disadvantage shows some nuanced shifts from Q1 to Q3 as indicated in Table 8.

Table 8. Changes in Demographic Share by Economic Status

| | Q1: Not Economically Disadvantaged | Q1: Economically Disadvantaged | Q1 Total | Q3: Not Economically Disadvantaged | Q3: Economically Disadvantaged | Q2 Total |
|--|------------------------------------|--------------------------------|----------|------------------------------------|--------------------------------|----------|
| Asian | 4964 3.06 | 3283 1.06 | 8247 | 5097 2.93 | 3160 1.07 | 8257 |
| Black/ African American | 10174 6.27 | 83111 26.83 | 93285 | 12742 7.32 | 79600 27.03 | 92342 |
| Hispanic | 11473 7.07 | 53044 17.13 | 64517 | 13066 7.50 | 51472 17.48 | 64538 |
| Native American/ Alaskan Native | 1113 0.69 | 1665 0.54 | 2778 | 1198 0.69 | 1530 0.52 | 2728 |
| More than one race | 5205 3.21 | 11282 3.64 | 16487 | 5922 3.40 | 10478 3.56 | 16400 |
| Native Hawaiian/ Pacific Islander | 501 0.31 | 4089 1.32 | 4590 | 782 0.45 | 3827 1.30 | 4609 |
| White | 128940 79.41 | 153256 49.48 | 282196 | 135367 77.72 | 144397 49.04 | 279764 |
| Total | 162370 | 309730 | 472100 | 174174 | 294464 | 468638 |

Year-over-Year Changes in Enrollment

What about changes from prior year to the current year? How did enrollment, Q1 ADM, and Q3 ADM change from 2020 to 2021? How does this compare to other year-over-year changes? Figure 9 includes all districts except those whose year-over-year percentage change was greater than 50.

The drop from 2020 to 2021 is noticeable overall for all three statistics and the distributions are more compressed in 2021.

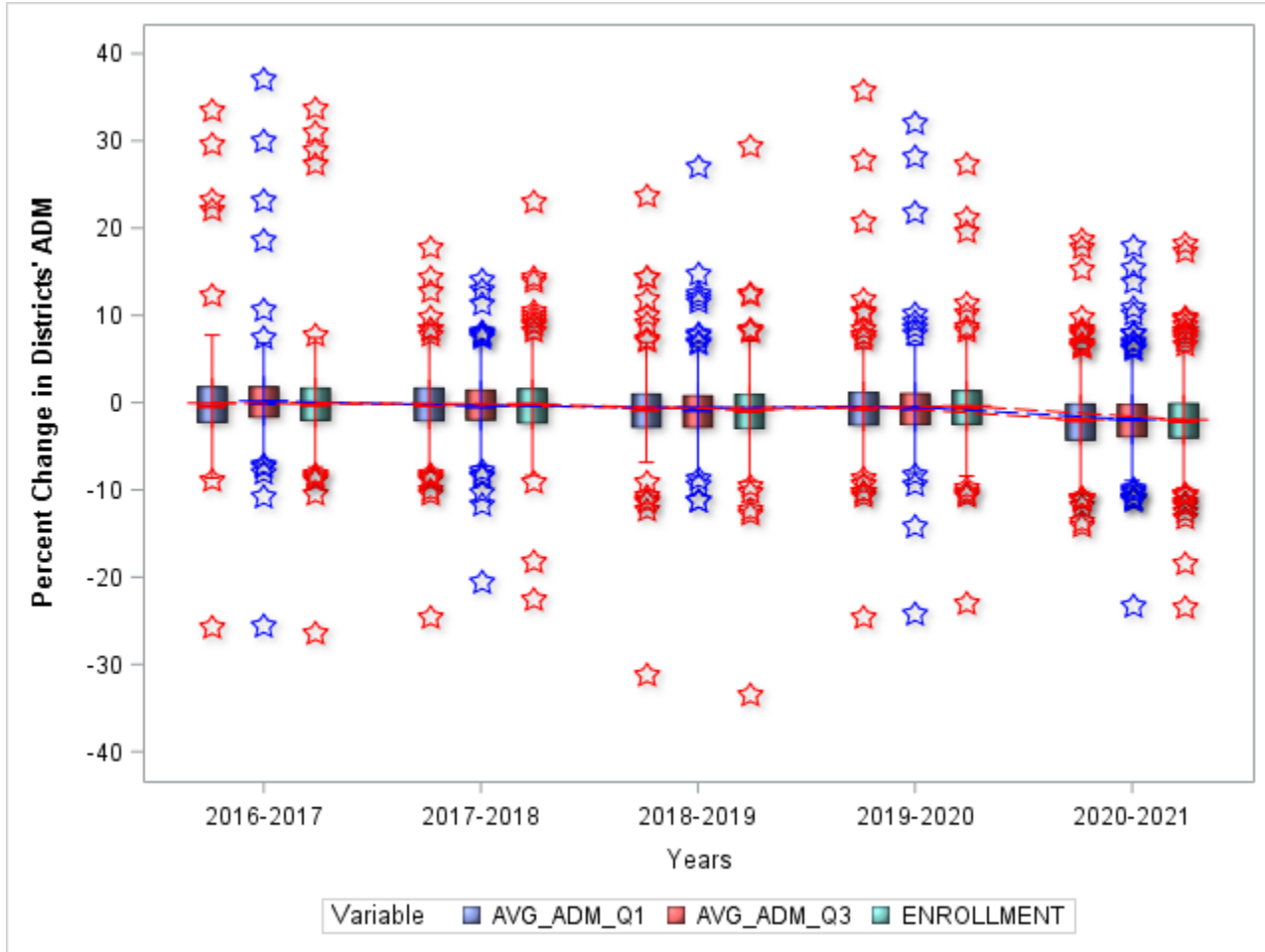


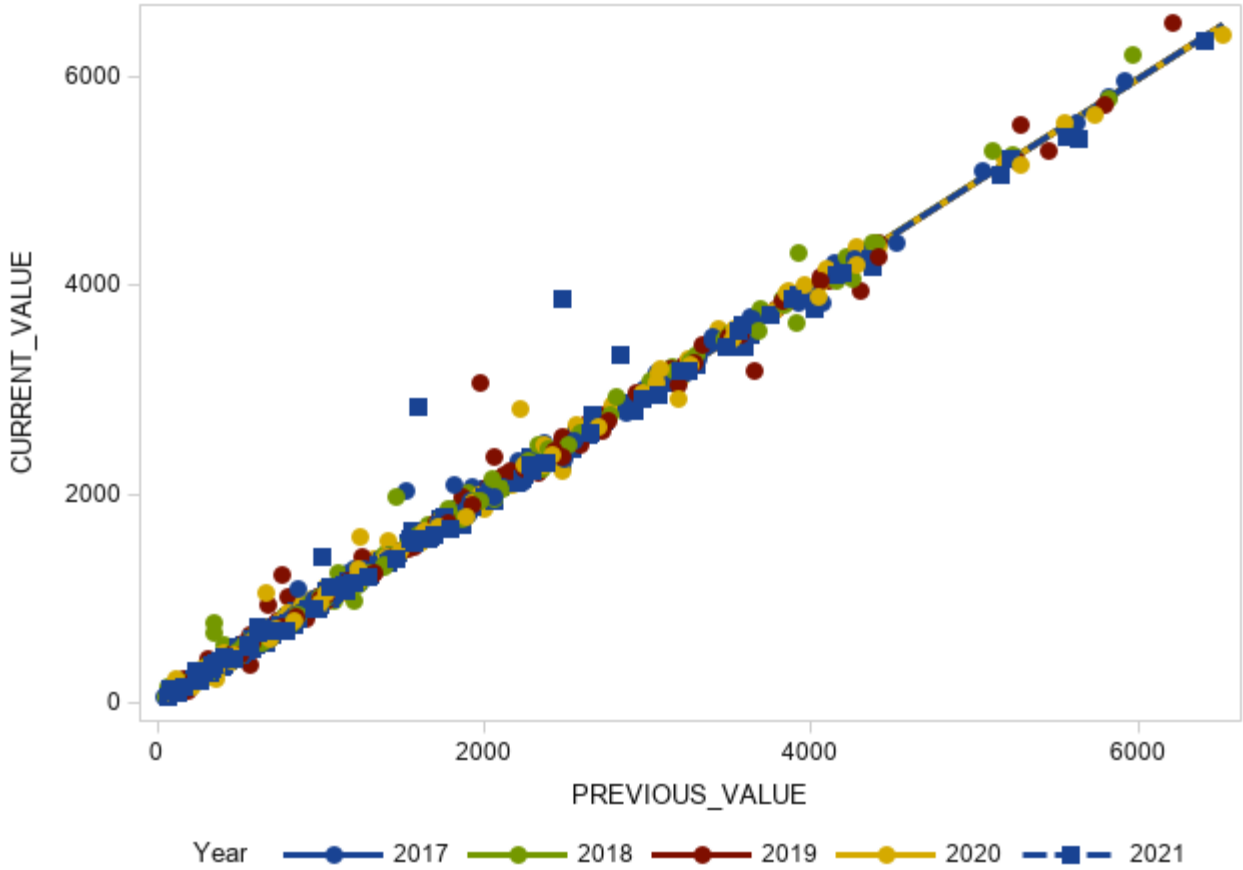
Figure 9. Distribution of the percentage change in districts' ADM Q1 to Q1 prior year, Q3 to Q3 prior year, and enrollment current to prior year.

Table 9 provides the summary of the year-over-year changes for each year for all three statistics. The percentage change for 2020 to 2021 confirms the visual evidence in the box plots in Figure 9 that the year-over-year changes are larger in magnitude than the change in other years.

Table 9. Summary Information for Percentage Change in ADM Year-Over-Year

| | Number of Districts | Mean | | | Median | | | Minimum | | | Maximum | | |
|-----------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT | AVG ADM Q1 | AVG ADM Q3 | ENROLLMENT |
| 2016-2017 | 244 | -0.05 | 0.19 | -0.01 | -0.43 | -0.08 | -0.26 | -25.80 | -25.64 | -26.35 | 33.50 | 36.98 | 33.84 |
| 2017-2018 | 245 | -0.22 | -0.34 | -0.18 | -0.31 | -0.46 | -0.24 | -24.63 | -20.77 | -22.56 | 17.76 | 13.97 | 22.95 |
| 2018-2019 | 245 | -0.63 | -0.59 | -0.8 | -0.84 | -0.87 | -0.98 | -31.23 | -11.42 | -33.51 | 23.80 | 26.85 | 29.42 |
| 2019-2020 | 246 | -0.43 | -0.51 | -0.38 | -0.73 | -0.70 | -0.66 | -24.54 | -24.39 | -23.00 | 35.82 | 32.02 | 27.37 |
| 2020-2021 | 247 | -1.94 | -1.93 | -1.95 | -2.04 | -1.94 | -2.14 | -14.16 | -23.53 | -23.53 | 18.76 | 17.86 | 18.30 |

We used scatterplots and districts' enrollment from 2016 to 2021 to visualize the year-over-year changes in enrollment to tease out more detail for assessing district-level changes. The scatterplots illustrate the overall pattern of year-over-year enrollment changes as well as any unusually large changes for districts in a particular year. In Figure 10 the blue squares indicate the change in enrollment from 2020 to 2021. Districts' enrollments were slightly lower in 2021 compared to 2020. The few districts increasing in size to a larger degree are small, newer charter high schools or charter virtual



schools.

Figure 10. Scatterplot of prior to current school year districts' enrollment for 2017 through 2021.

The scatterplots in Figures 11-13 provide a closer look at the distribution for each year-over-year change starting with the most current. Note that every year has some districts whose increase or decrease is outside of the 95% confidence interval. At the same time, most districts are within a 95% confidence interval in enrollment change with 2021 demonstrating a slightly lower enrollment pattern overall.

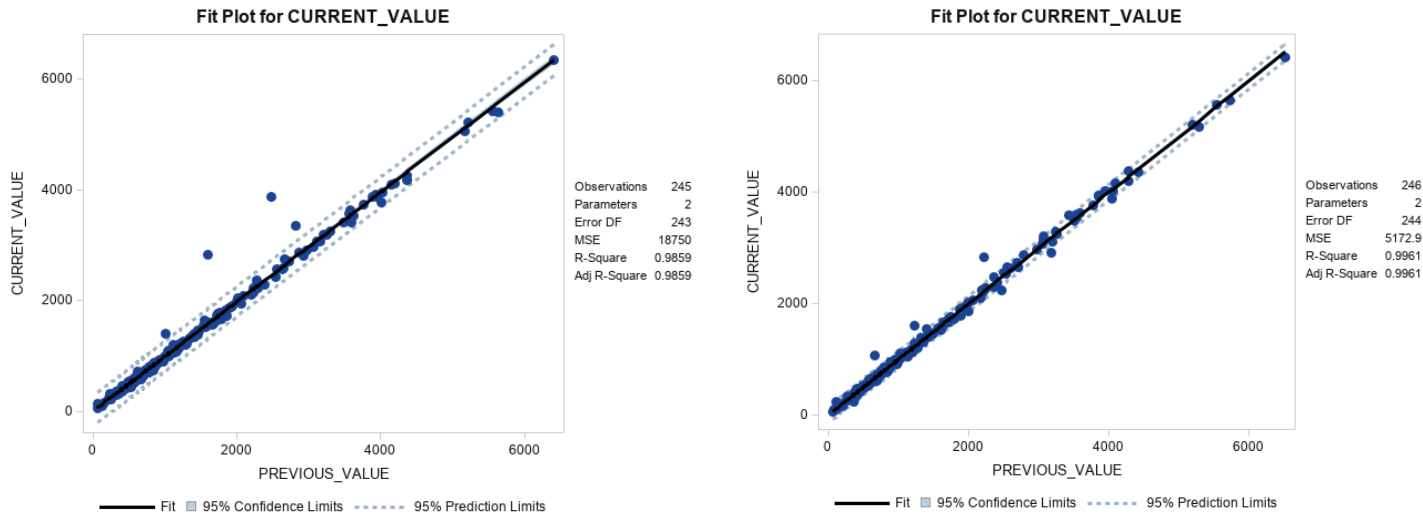


Figure 11. 2020 to 2021 (left) and 2019 to 2020 (right) changes in enrollment for districts less than 6,600 students.

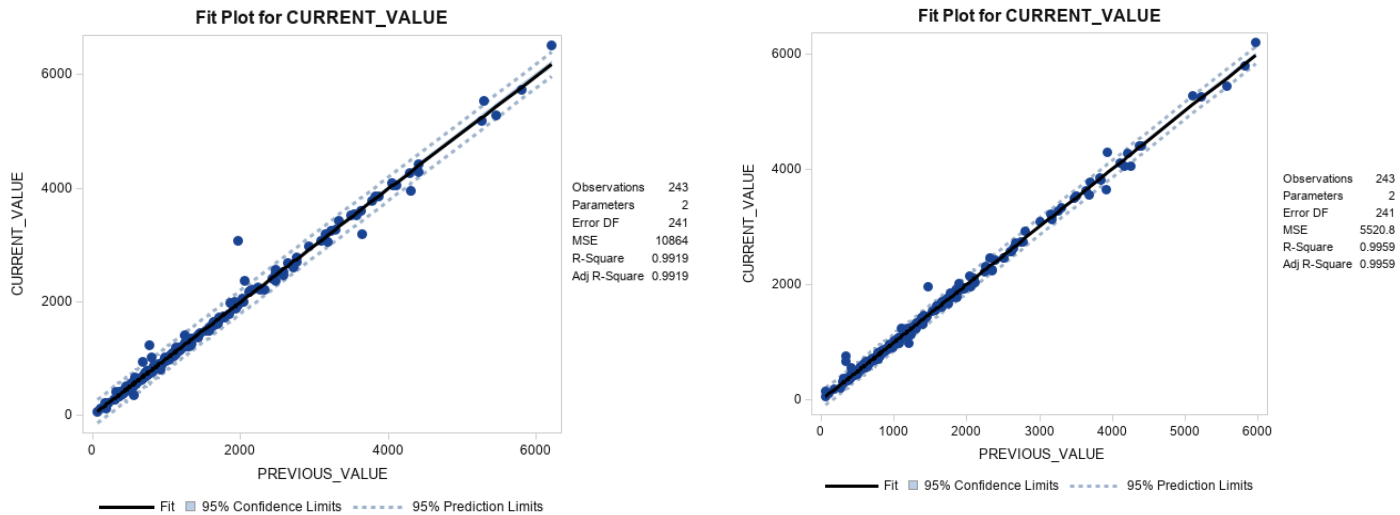


Figure 12. 2018 to 2019 (left) and 2017 to 2018 (right) changes in enrollment for districts less than 6,600 students.

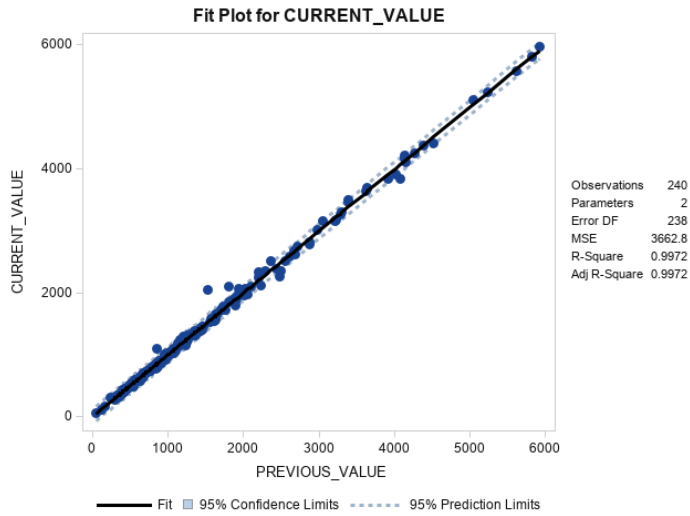


Figure 13. 2016 to 2017 changes in enrollment for districts less than 6,600 students.

One more view of the percentage change from 2020 to 2021 highlights the very slight rebound in Q3 ADM compared to enrollment and Q1 ADM. The red line in the curve is to the right of the blue and green for the highest proportion of districts (top of the curve). The districts with greater than 50 percent change are listed in the Appendix for reference.

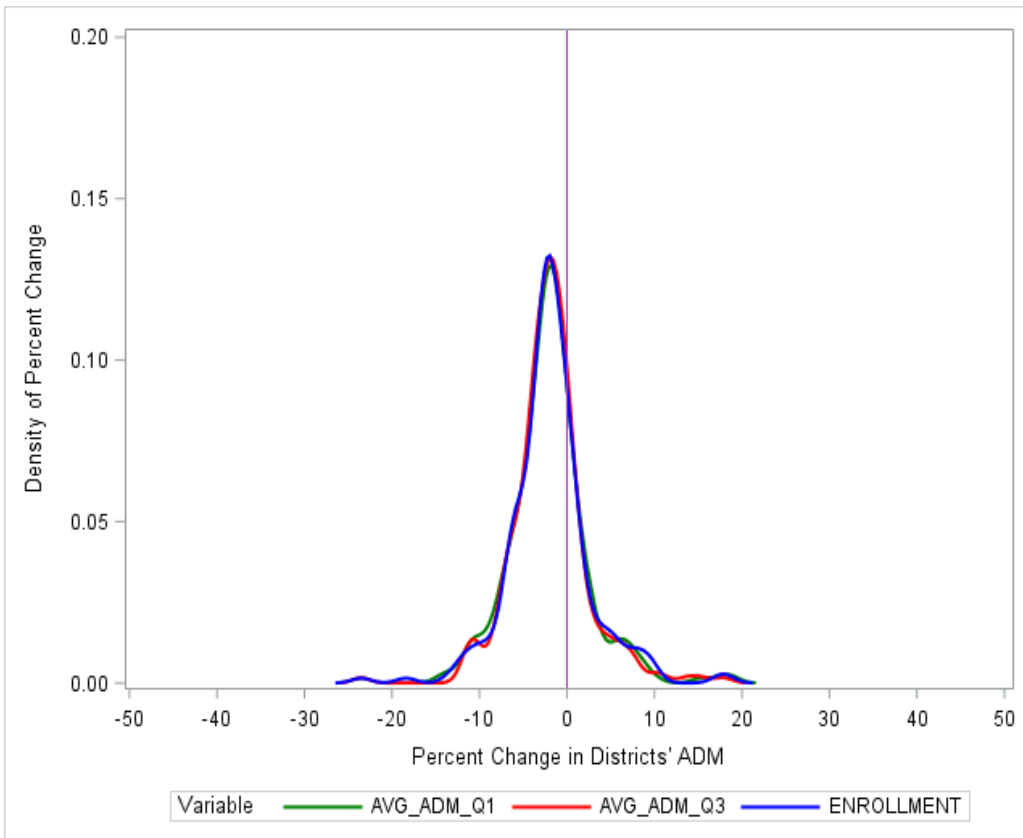


Figure 14. Percentage changes in first and third quarter SY2021 ADM compared to SY2020 and SY2021 enrollment compared to SY 2020.

Analysis of Districts by Region

The analyses for the state provide context for understanding regional differences. The enrollment trends for districts exhibit varied patterns by region. The 11 largest districts are removed from the distribution before calculating average enrollment in regional analyses because the magnitude of the enrollment of the largest districts skews the average statistics for the northwest and central regions. Figure 15 illustrates average enrollment by region with the 11 largest districts removed from the northwest and central regions.

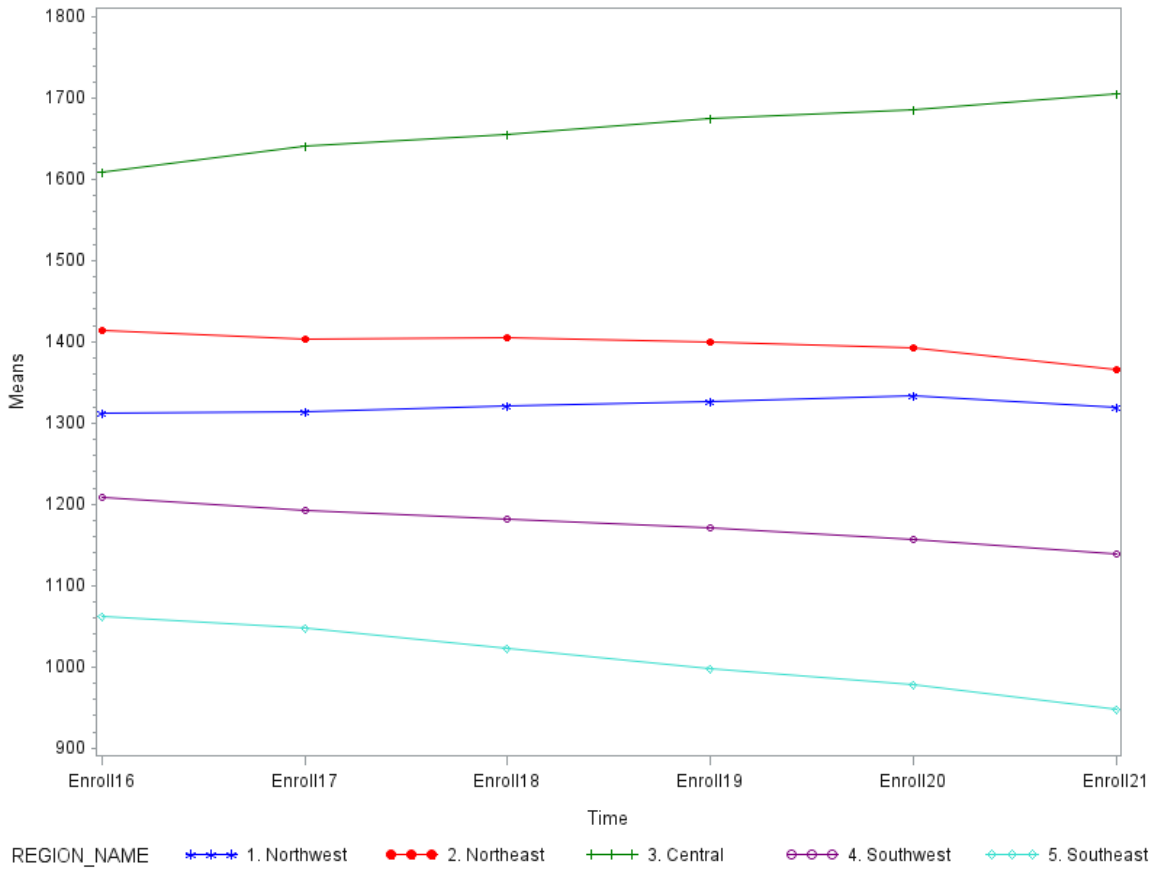


Figure 15. Average enrollment for districts with enrollment less than 6,600 (right).

There are differences in the enrollment trends between regions and over time.

- The southeast, northeast, and southwest have a slightly downward trend from 2016 to 2021.
- The northwest region enrollment trended upward until 2021.
- The central region increased enrollment in districts over time.

These slight regional differences in average enrollment trends were visually masked by the inclusion of the eleven largest districts.

The eleven large districts demonstrate different patterns within their regions as indicated in Figure 16.

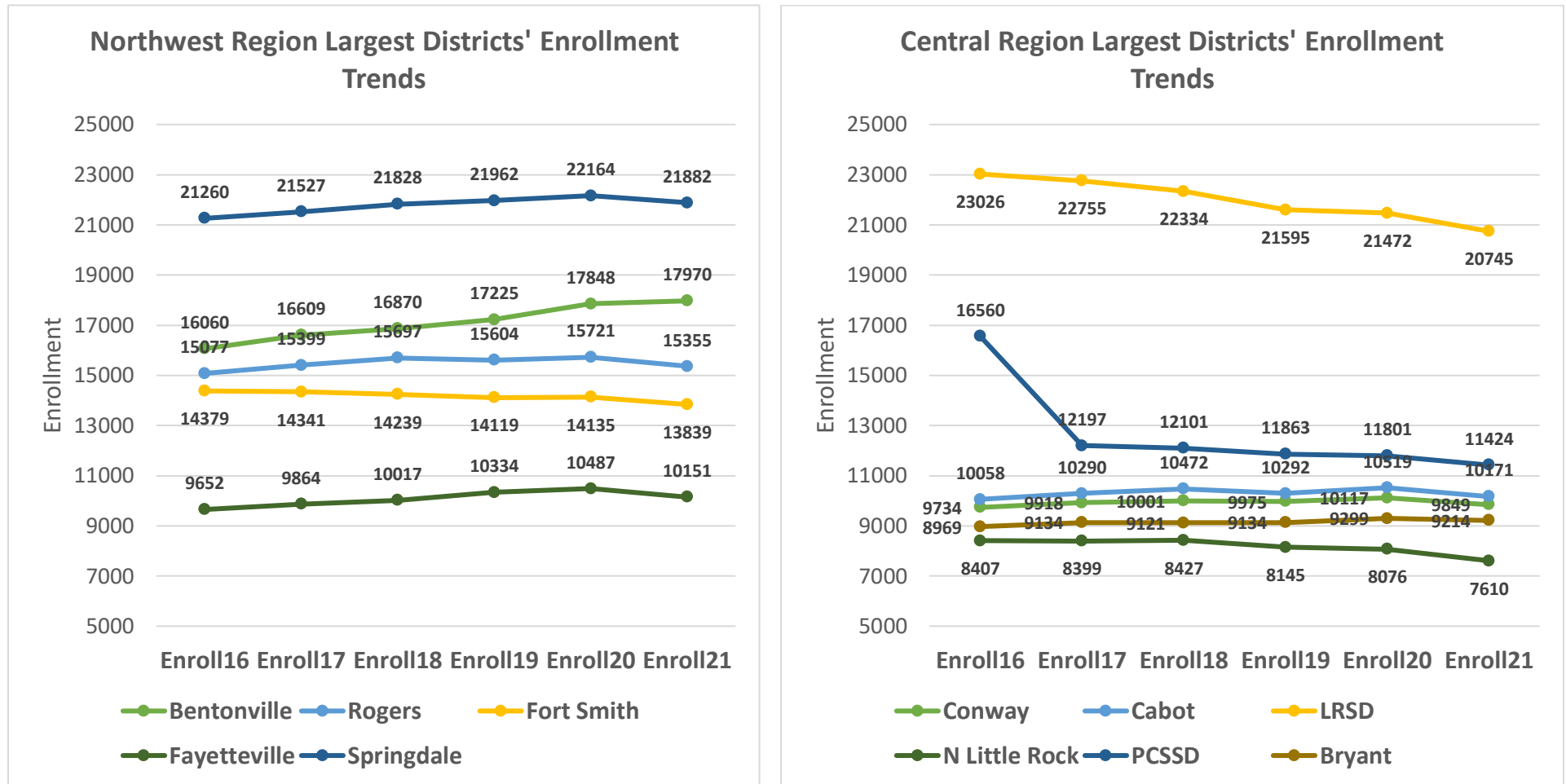


Figure 16. Enrollment trends for 11 largest districts from 2016 through 2021.

In the northwest region Fayetteville, Springdale, and Bentonville have upward enrollment trends through 2020 with Fayetteville and Springdale declining from 2020 to 2021. Rogers demonstrated increases like Fayetteville but with declines in 2019 and 2021. Fort Smith has seen a slight declining enrollment trend.

In the central region Little Rock School District has a steeper declining trend from 2016 through 2021 compared to the other districts. PCSSD experienced a decline in enrollment in 2017 due to the separation of the Jacksonville area schools into their own district. Their trend has been a slight decline from 2017 through 2021. Cabot and Conway demonstrate a similar almost flat trend with slight increases offset by declines from 2018 to 2019 and from 2020 to 2021. The Bryant school district has remained relatively flat with slight increases in 2020 and 2021. North Little Rock has seen a steady decline since 2018.

Figures 17 – 26 illustrate the regional trends in percentage change in districts’ enrollment, Q1 ADM, and Q3 ADM year-over-year. The central and southeast regions exhibit the most variability in percentage of year-over-year change. Additionally, these two regions appear to have a greater proportion of districts that had lower Q3 ADM compared to Q1 ADM (Figures 21, 22, 25, & 26). *Despite the increased variation in two of the regions, analysis of variance resulted in no interaction or main effect for districts’ 2020 enrollment and/or regional location on the percentage change in enrollment, Q1 ADM, or Q3 ADM in 2021. Thus, these factors did not explain the differences among districts’ changes in 2021 which indicates other factors may be at play in these two regions.*

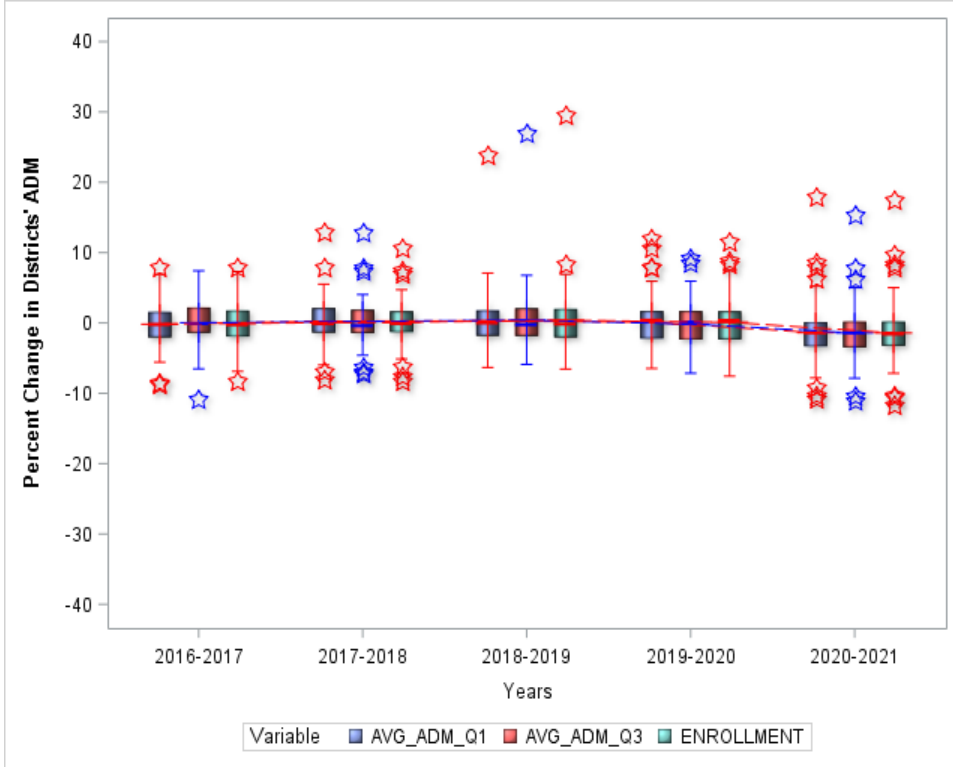


Figure 17. Northwest percentage change Districts Average Q1 Compared to Q3.

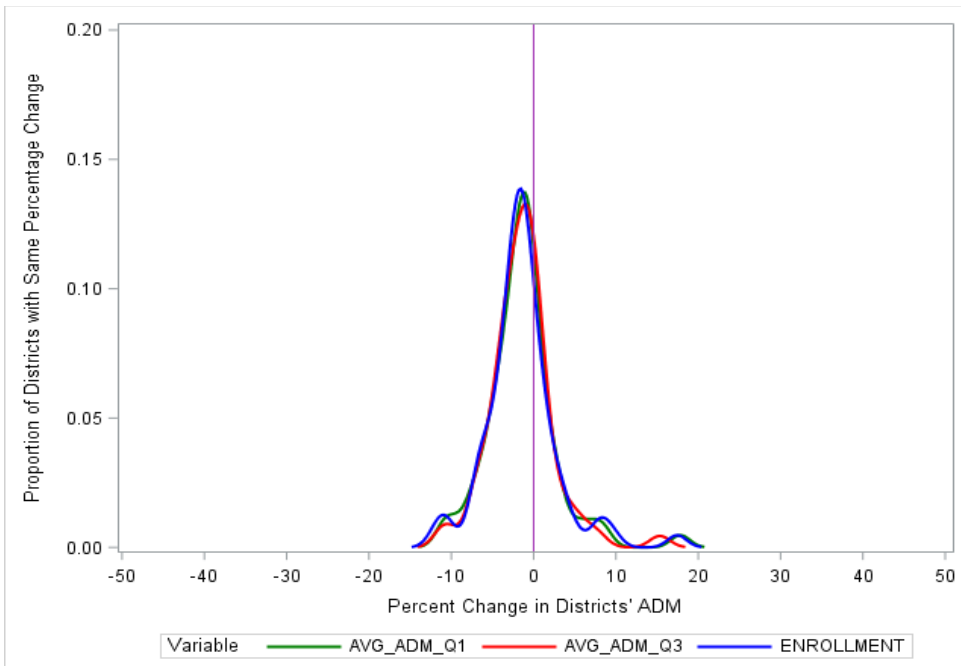


Figure 18. Northwest distribution of percentage change for districts 2020 to 2021.

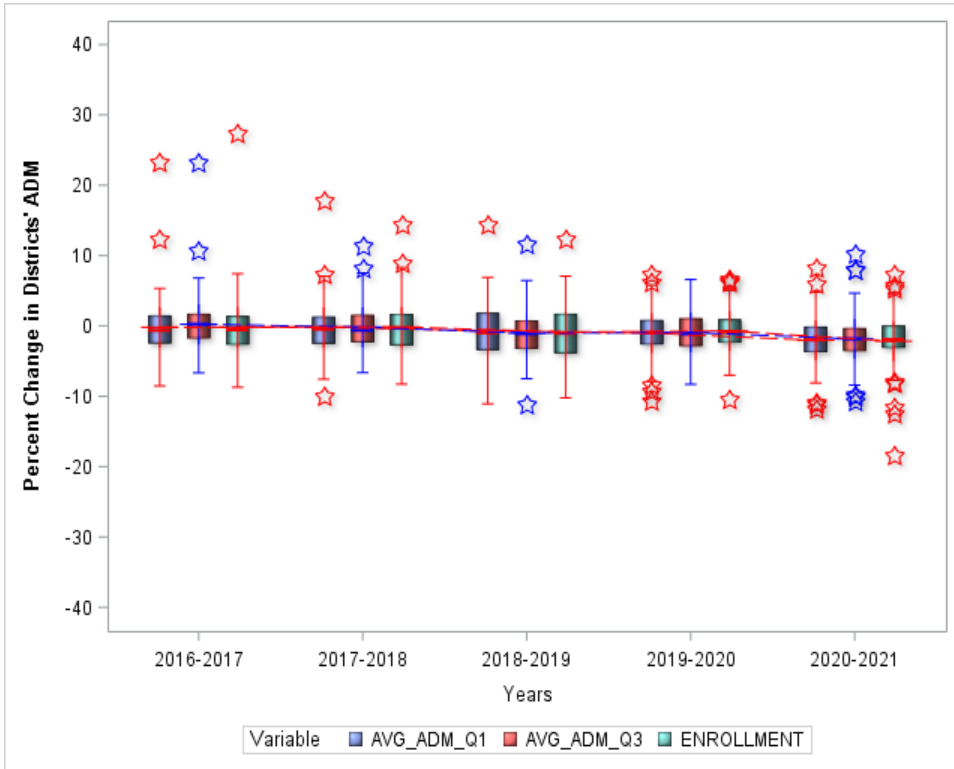


Figure 19. Northeast percentage change Districts Average Q1 Compared to Q3.

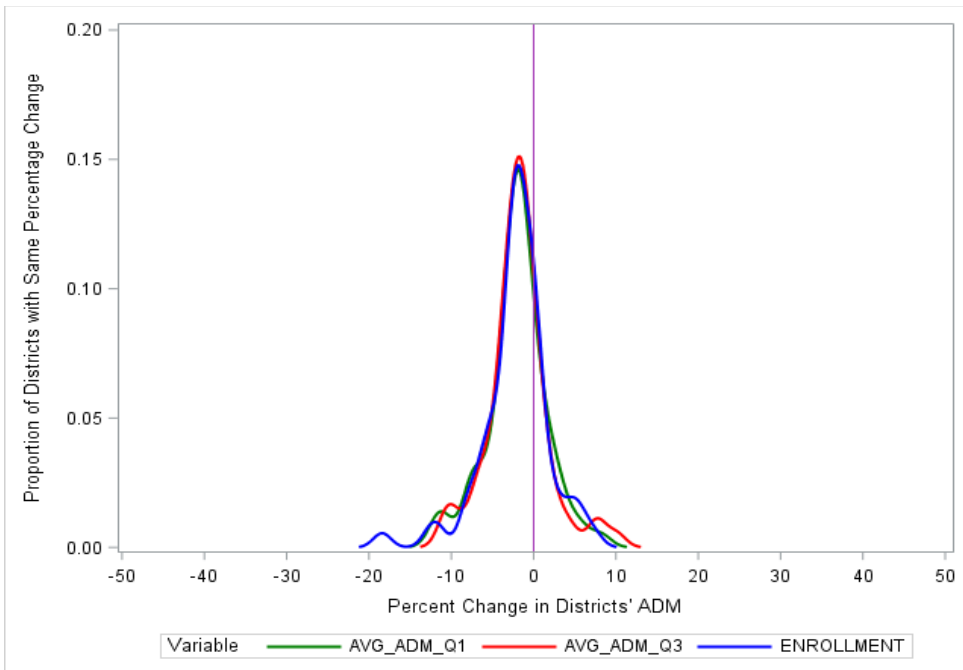


Figure 20. Northeast distribution of percentage change for districts 2020 to 2021.

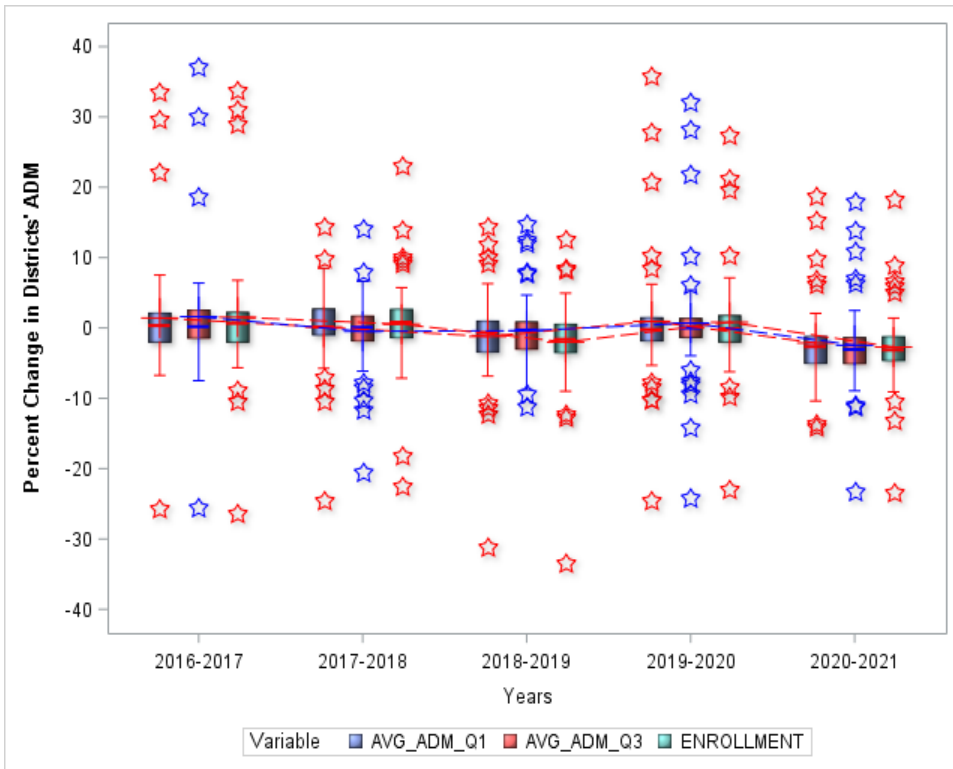


Figure 21. Central percentage change Districts Average Q1 Compared to Q3.

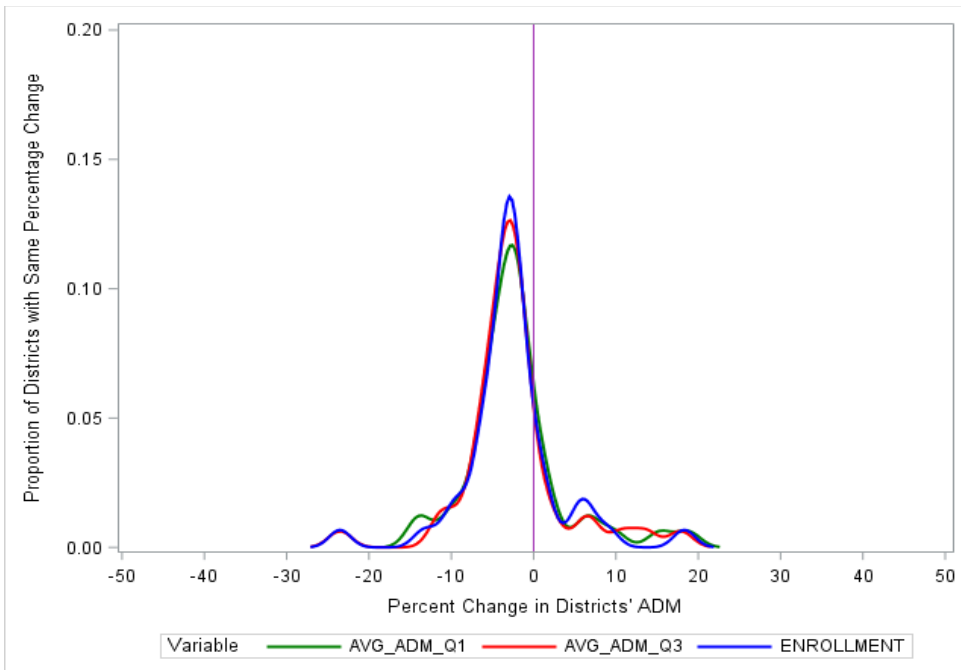


Figure 22. Central distribution of percentage change for districts 2020 to 2021.

Analysis of variance indicated the size of districts' enrollment in 2020 did not explain the percentage change in enrollment, Q1 ADM, or Q3 ADM in 2021. There were no interaction effects or main effects for region and 2020 districts' enrollment. Thus, there was no pattern or trend for percentage changes in these statistics based on a districts' prior size or regional location.

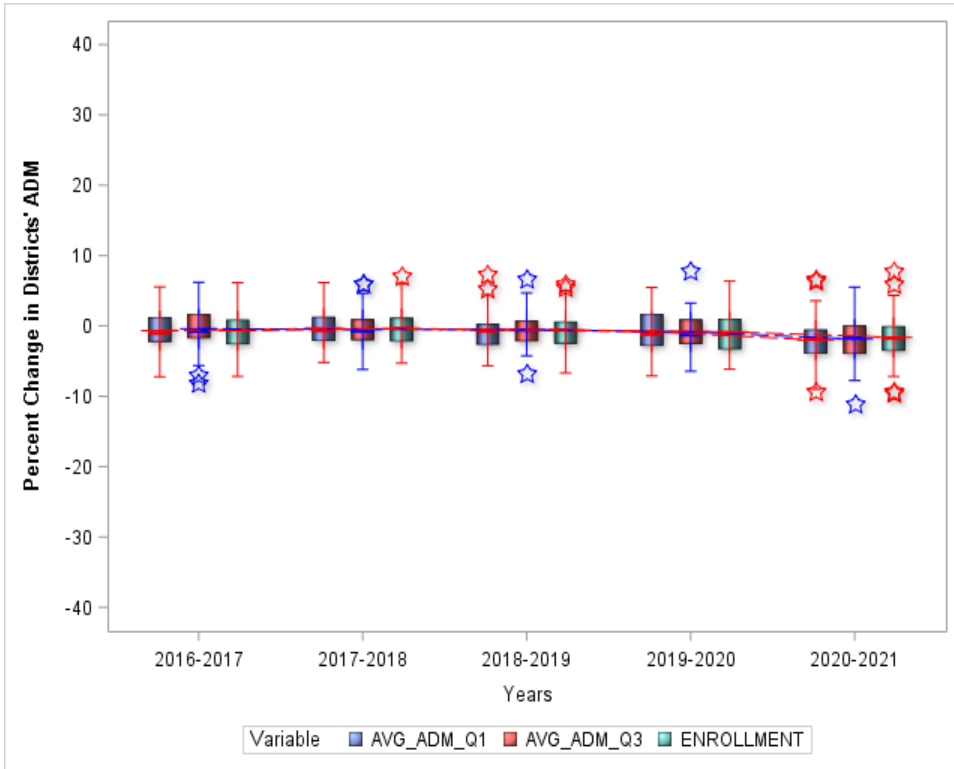


Figure 23. Southwest percentage change Districts Average Q1 Compared to Q3.

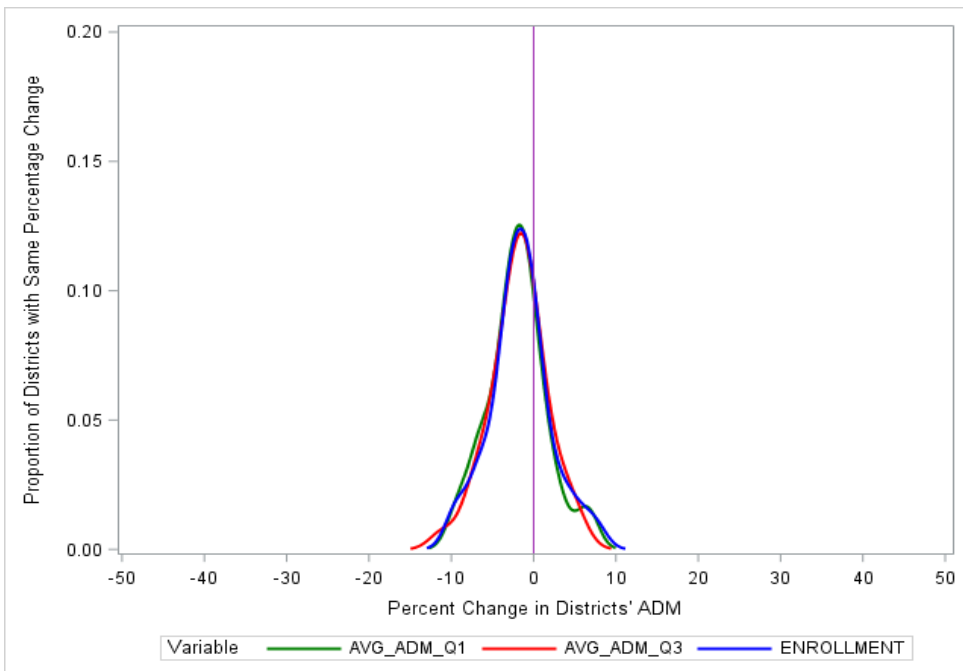


Figure 24. Southwest distribution of percentage change for districts 2020 to 2021.

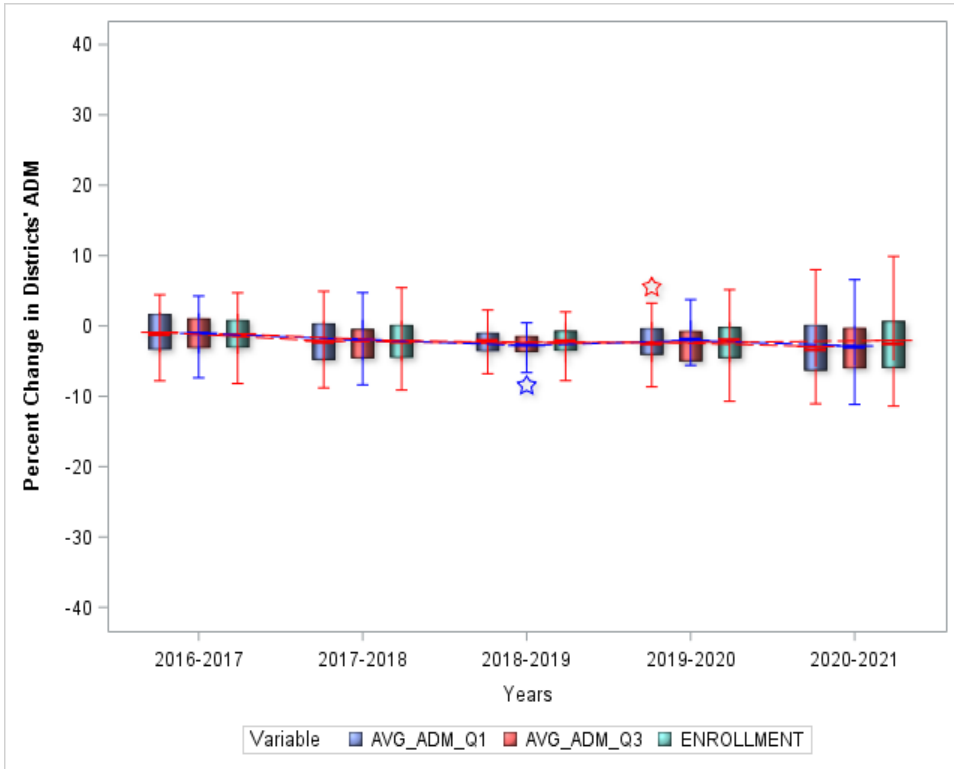


Figure 25. Southeast percentage change Districts Average Q1 Compared to Q3.

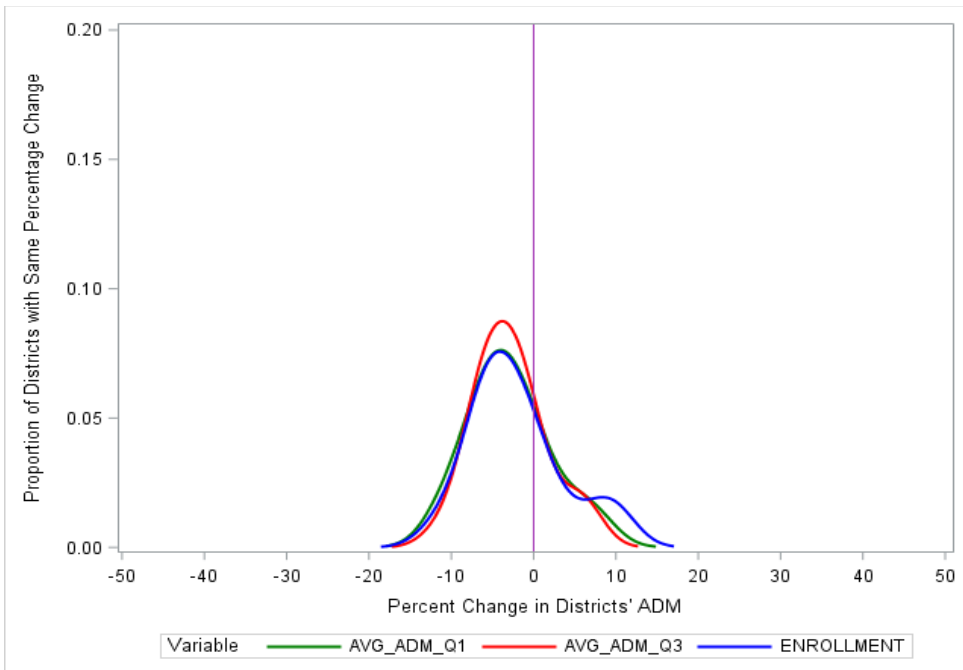


Figure 26. Southeast distribution of percentage change for districts 2020 to 2021.

Despite the increased variation in two of the regions, analysis of variance resulted in no interaction or main effect for districts' 2020 enrollment and/or regional location on the percentage change in enrollment, Q1 ADM, or Q3 ADM in 2021. Thus, these factors did not explain the differences among districts' changes in 2021.

Drop Code Analysis 2020 and 2021 Cycle 2 and Cycle 6

Table 10 summarizes the drop code analysis for cycles 2 and 6 and compares the change in drop code frequencies at each time point. Positive number represent an increase and negative number represent a decrease. The drop codes that exhibit change at or above a tenth of a percent among all drop codes are highlighted in light yellow. Most of these changes in percent of all drop codes are very similar in 2020 (Table 6) compared to 2021. Drop code 14, which includes no-shows in cycle 2 and other reasons for withdrawal in later cycles, is somewhat higher in 2021 (0.48%) compared to 2020 (0.27%). This is likely due to schools misunderstanding they needed to code no-shows by September 30, 2020 and have been updating their cycle submissions to include no-shows that should have been indicated by Cycle 2.

Table 10 Drop Code 2021 for Cycles 2 and 6

| Drop Code | Count Cycle 2 2021 | Percent Cycle 2 2021 | Count Cycle 6 2021 | Percent Cycle 6 2021 | Percent Change Cycle 2 to Cycle 6 | Number of Students Change Cycle 2 to Cycle 6 |
|-------------------------------------|-----------------------|-------------------------|-----------------------|-------------------------|---|---|
| 0-NA | 472375 | 91.02 | 468697 | 86.23 | -4.79 | -3678 |
| 1-Enroll in Another AR School | 27319 | 5.26 | 43531 | 8.01 | 2.75 | 16212 |
| 2-Incarcerated | 46 | 0.01 | 96 | 0.02 | 0.01 | 50 |
| 3-Deceased | 53 | 0.01 | 124 | 0.02 | 0.01 | 71 |
| 4-Failing Grades | < 10 | < 10. | < 10 | < 10 | < 10 | < 10 |
| 5-Suspended or Expelled | < 10 | 0.00 | 23 | 0.00 | 0.00 | 20 |
| 6-Lack of Interest | 139 | 0.03 | 514 | 0.09 | 0.06 | 375 |
| 7-Conflict with School | 11 | 0.00 | 27 | 0.00 | 0.00 | 16 |
| 8-Economic Hardship | < 10 | 0.00 | 18 | 0.00 | 0.00 | 16 |
| 9-Pregnancy/Marriage | < 10 | 0.00 | < 10 | 0.00 | 0.00 | < 10 |
| 10-Peer Conflict | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 11-Enrolled in GED | 189 | 0.04 | 483 | 0.09 | 0.05 | 294 |
| 13-Health Problems | 18 | 0.00 | 29 | 0.01 | 0.01 | 11 |
| 14-Other-Noshows in Cycle 2 | 2255 | 0.43 | 4934 | 0.91 | 0.48 | 2679 |
| 15-Early Graduates | 55 | 0.01 | 653 | 0.12 | 0.11 | 598 |
| 16-Enrolled in Private School | 1315 | 0.25 | 1587 | 0.29 | 0.04 | 272 |
| 17-Enrolled in Home School | 7127 | 1.37 | 9418 | 1.73 | 0.36 | 2291 |
| 18-Enrolled in School Out of State | 8055 | 1.55 | 13400 | 2.47 | 0.92 | 5345 |
| 19-Returned from Expulsion Services | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |

The same patterns of change from Cycle 2 to Cycle 6 are evident in 2019. The change in percentage of drop codes, aside from slightly higher 14-Noshows in Cycle 6 in 2021, are relatively the same across the years (Tables 10 - 12).

Table 12. Drop Code 2019 for Cycles 2 and 6

| Drop Code | Count Cycle 2 2019 | Percent Cycle 2 2019 | Count Cycle 6 2019 | Percent Cycle 6 2019 | Percent Change Cycle 2 to Cycle 6 | Number of Students Change Cycle 2 to Cycle 6 |
|------------------------------------|-------------------------------|---------------------------------|-------------------------------|---------------------------------|--|---|
| 0-NA | 477722 | 91.44 | 474090 | 86.41 | -5.03 | -3632 |
| 1-Enroll in Another AR School | 28284 | 5.41 | 45808 | 8.35 | 2.94 | 17524 |
| 2-Incarcerated | 56 | 0.01 | 135 | 0.02 | 0.01 | 79 |
| 3-Deceased | 46 | 0.01 | 100 | 0.02 | 0.01 | 54 |
| 4-Failing Grades | < 10 | < 10 | < 10 | < 10 | < 10 | < 10 |
| 5-Suspended or Expelled | 109 | 0.02 | 516 | 0.09 | 0.07 | 407 |
| 6-Lack of Interest | 138 | 0.03 | 392 | 0.07 | 0.04 | 254 |
| 7-Conflict with School | 19 | 0.00 | 43 | 0.01 | 0.01 | 24 |
| 8-Economic Hardship | < 10 | 0.00 | 21 | 0.00 | 0.00 | 16 |
| 9-Pregnancy/Marriage | < 10 | 0.00 | 10 | 0.00 | 0.00 | < 10 |
| 11-Enrolled in GED | 136 | 0.03 | 390 | 0.07 | 0.04 | 254 |
| 13-Health Problems | 18 | 0.00 | 31 | 0.01 | 0.01 | 13 |
| 14-Other-Noshows in Cycle 2 | 4045 | 0.77 | 6037 | 1.10 | 0.33 | 1992 |
| 15-Early Graduates | 72 | 0.01 | 600 | 0.11 | 0.10 | 528 |
| 16-Enrolled in Private School | 881 | 0.17 | 1168 | 0.21 | 0.04 | 287 |
| 17-Enrolled in Home School | 2213 | 0.42 | 4767 | 0.87 | 0.45 | 2554 |
| 18-Enrolled in School Out of State | 8685 | 1.66 | 14560 | 2.65 | 0.99 | 5875 |

Trends in Instructional Options within the 2020-21 School Year

State and Regional Trends

Arkansas Ready for Learning was designed to support districts in planning for continuity of student learning in the event of disruptions during the school year. At first, it was expected that all schools would start with on-site/ traditional instruction and move to some form of remote learning if needed. As the summer of 2020 progressed and COVID-19 cases started to resurge and climb as indicated in Figure 27, districts proposed plans for on-site/ traditional, virtual/ remote, and/or hybrid/ blended learning options to meet the concerns of students and families. For the first time, districts were required to code students’ status relative to the instructional option the student was enrolled in to ensure continuity of learning.

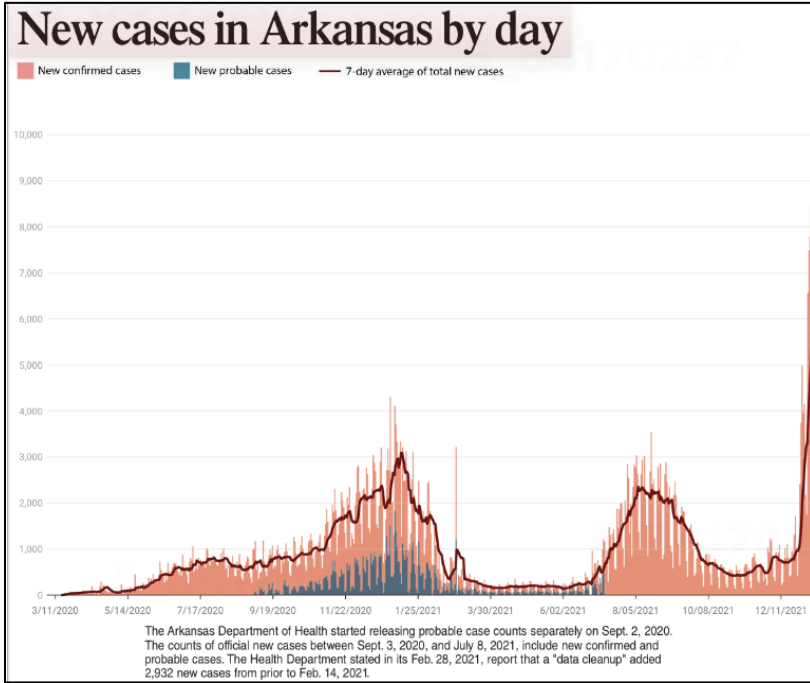


Figure 27. COVID-19 new cases by day from March 2020 through January 13, 2022.

We conducted an analysis of students’ instructional option for the Division of Elementary and Secondary Education and provided follow-up monitoring of changes in students’ instructional option throughout the 2021 school year. Table 13 indicates the percentage of students in each instruction option at October 1 enrollment (Cycle 2) and at the end of the school year (Cycle 7).

Table 13. Cycles 2 and 7 Percent of Students in Instructional Options

| Instructional Option Cycle 2 2021 | Frequency | Percent |
|--|------------------|----------------|
| 1 – On-site / Traditional | 295576 | 62.46 |
| 2 – Virtual/ Remote Learning | 115748 | 24.46 |
| 3 – Hybrid/ Blended Learning | 61882 | 13.08 |
| Total | 473,206 | |
| Instructional Option Cycle 7 2021 | Frequency | Percent |
| 1 – On-site / Traditional | 327353 | 70.09 |
| 2 – Virtual/ Remote Learning | 83873 | 17.96 |
| 3 – Hybrid/ Blended Learning | 55802 | 11.95 |
| Total | 467028 | |

At the beginning of the school year roughly two thirds of students were in on-site/ traditional instruction. By the end of the school year almost three fourths of students were receiving instruction on-site. At the cycle 2 snapshot 25% of students were enrolled in a virtual/ remote option and 13% in a hybrid/ blended learning option. By cycle 7 virtual was reduced to 18% and hybrid/ blended reduced by just 1%.

Regional analyses revealed differences by region in the proportion of students learning via each instructional option as indicated in Table 14.

Table 14. October 1 Enrollment Instructional Option by Region (Percent within Region)

| Students' 2021 Instructional Option Cycle 2 | REGION | | | | | |
|---|-----------------|----------------|----------------|----------------|----------------|--------|
| | 1 (NW) | 2 (NE) | 3 (C) | 4 (SW) | 5 (SE) | Total |
| 1 – On-site / Traditional | 124897 72.63 | 59503 65.02 | 70006 48.67 | 30469 70.42 | 10736 47.31 | 295611 |
| 2 – Virtual/ Remote Learning | 30649 17.82 | 20644 22.56 | 49953 34.73 | 8627 19.94 | 5894 25.97 | 115767 |
| 3 – Hybrid/ Blended Learning | 16418 9.55 | 11364 12.42 | 23870 16.60 | 4169 9.64 | 6064 26.72 | 61885 |
| Total | 171964 | 91511 | 143829 | 43265 | 22694 | 473263 |

The southwest, northwest, and northeast regions had most students in on-site instruction. The central region and southeast had a larger proportion of students in virtual and hybrid relative to the other regions. In the central region more than a third of students were virtual whereas in the southeast region students were equally split between virtual and hybrid options.

By Cycle 7 the distribution of students by instructional option had shifted toward a majority of students face-to-face in all regions; but regional differences persisted to some degree throughout the 2021 school year as indicated in Table 15.

Table 15. October 1 Enrollment Instructional Option by Region (Percent within Region)

| Students' 2021 Instructional Option Cycle 7 | REGION | | | | | |
|---|-----------------|----------------|----------------|----------------|----------------|--------|
| | 1 | 2 | 3 | 4 | 5 | Total |
| 1 – On-site / Traditional | 135828 79.73 | 64578 71.43 | 80295 56.84 | 34137 79.78 | 12569 56.26 | 327407 |
| 2 – Virtual/ Remote Learning | 22265 13.07 | 14606 16.16 | 37485 26.54 | 5375 12.56 | 4156 18.60 | 83887 |
| 3 – Hybrid/ Blended Learning | 12271 7.20 | 11224 12.41 | 23477 16.62 | 3278 7.66 | 5614 25.13 | 55864 |
| Total | 170364 | 90408 | 141257 | 42790 | 22339 | 467158 |

Demographics of 2021 Students by Instructional Options

Asian and Black/African American students attended virtual and hybrid options more than other race/ethnicity groups with less than 50% of these students in on-site/ traditional learning in Cycle 2 snapshot.

Table 16. October 1 Enrollment Percent of Students in Instructional Options by Demographics

| Students' 2021 Instructional Option Cycle 2 | Federal Race Code | | | | | | | Total |
|---|-------------------|--------------------------------|---------------|------------------------|----------------------------------|-----------------|--------------------|--------|
| | Hispanic/Latino | Native American/Alaskan Native | Asian | Black/African American | Native Hawaiian/Pacific Islander | White | More than one race | |
| 1 – On-site / Traditional | 43794 67.68 | 1938 69.44 | 3702 44.69 | 43816 46.92 | 3190 69.33 | 188448 66.59 | 10723 64.94 | 295611 |
| 2 – Virtual/ Remote Learning | 12940 20.00 | 640 22.93 | 3699 44.66 | 39494 42.29 | 436 9.48 | 54525 19.27 | 4033 24.42 | 115767 |
| 3 – Hybrid/ Blended Learning | 7971 12.32 | 213 7.63 | 882 10.65 | 10080 10.79 | 975 21.19 | 40008 14.14 | 1756 10.63 | 61885 |
| Total | 64705 | 2791 | 8283 | 93390 | 4601 | 282981 | 16512 | 473263 |

Although students in the Asian and Black/African American race groups returned to on-site instruction by the end of the school year they were still more represented among the students in virtual learning as indicated in Table 17.

Table 17. Cycle 7 Percent of Students in Instructional Options by Demographics

| Students' 2021 Instructional Option Cycle 7 | Federal Race Code | | | | | | | Total |
|---|-------------------|--------------------------------|---------------|------------------------|----------------------------------|-----------------|--------------------|--------|
| | Hispanic/Latino | Native American/Alaskan Native | Asian | Black/African American | Native Hawaiian/Pacific Islander | White | More than one race | |
| 1 – On-site / Traditional | 49347 76.59 | 2061 76.22 | 4297 52.34 | 56130 61.14 | 3580 78.22 | 200013 71.66 | 11979 73.39 | 327407 |
| 2 – Virtual/ Remote Learning | 8892 13.80 | 439 16.24 | 3121 38.01 | 26943 29.35 | 351 7.67 | 41313 14.80 | 2828 17.33 | 83887 |
| 3 – Hybrid/ Blended Learning | 6192 9.61 | 204 7.54 | 792 9.65 | 8728 9.51 | 646 14.11 | 37787 13.54 | 1515 9.28 | 55864 |
| Total | 64431 | 2704 | 8210 | 91801 | 4577 | 279113 | 16322 | 467158 |

Tables 18 through 21 provide the demographic breakdown for instructional options statewide for other subgroups.

For gender, slightly more females than males were in virtual options at Cycles 2 and 7 but these differences are not of a meaningful magnitude.

Table 18. Cycle 2 and 7 Percent of Students by Instructional Option and Gender

| Students' 2021 Instructional Option Cycle 2 | GENDER | | |
|---|-----------------|-----------------|--------|
| | F | M | Total |
| 1 – On-site / Traditional | 141049 61.14 | 154562 63.72 | 295611 |
| 2 – Virtual/ Remote Learning | 59343 25.72 | 56424 23.26 | 115767 |
| 3 – Hybrid/ Blended Learning | 30309 13.14 | 31576 13.02 | 61885 |
| Total | 230701 | 242562 | 473263 |
| 2021 Cycle 7 | GENDER | | |
| | F | M | Total |
| 1 – On-site / Traditional | 156050 68.47 | 171357 71.62 | 327407 |
| 2 – Virtual/ Remote Learning | 44503 19.53 | 39384 16.46 | 83887 |
| 3 – Hybrid/ Blended Learning | 27345 12.00 | 28519 11.92 | 55864 |
| Total | 227898 | 239260 | 467158 |

For economic status slightly more students who qualify for free/reduced were engaged in virtual instruction as indicated in Table 19. More economically disadvantaged students moved back to on-site/ traditional learning by the end of the year compared to students were not economically disadvantaged.

Table 19. Cycles 2 and 7 Percent of Students by Instructional Option and Economic Status

| Students' 2021 Instructional Option Cycle 2 | Student Free or Reduced Lunch Status | | |
|---|--------------------------------------|-----------------|--------|
| | No | Yes | Total |
| 1 – On-site / Traditional | 103838 63.30 | 191773 62.02 | 295611 |
| 2 – Virtual/ Remote Learning | 35553 21.67 | 80214 25.94 | 115767 |
| 3 – Hybrid/ Blended Learning | 24646 15.02 | 37239 12.04 | 61885 |
| Total | 164037 | 309226 | 473263 |
| Students' 2021 Instructional Option Cycle 7 | Student Free or Reduced Lunch Status | | |
| | No | Yes | Total |
| 1 – On-site / Traditional | 120189 68.54 | 207218 71.02 | 327407 |
| 2 – Virtual/ Remote Learning | 30915 17.63 | 52972 18.15 | 83887 |
| 3 – Hybrid/ Blended Learning | 24262 13.84 | 31602 10.83 | 55864 |
| Total | 175366 | 291792 | |

More English Learners opted for onsite instruction compared to students in any other demographic group and more English Learners moved to on-site/ traditional learning than English only students by Cycle 7 as indicated in Table 20.

Table 20. Cycles 2 and 7 Percent of Students by Instructional Option and English Learner Status

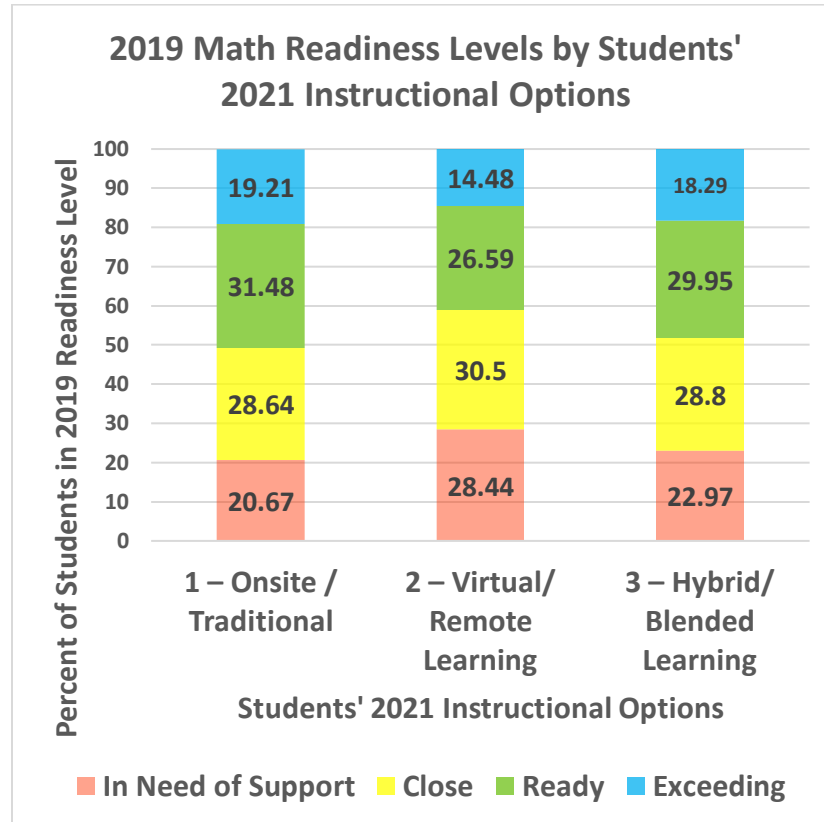
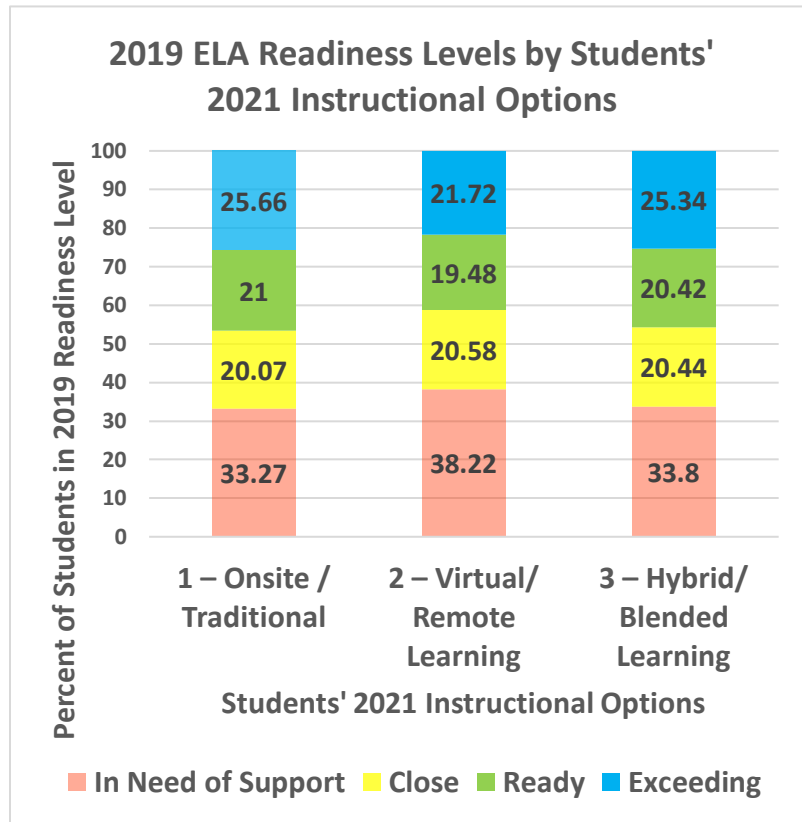
| Students' 2021 Instructional Option Cycle 2 | English Learner Status | | |
|---|------------------------|----------------|--------|
| | No | Yes | Total |
| 1 – On-site / Traditional | 268343 61.84 | 27268 69.29 | 295611 |
| 2 – Virtual/ Remote Learning | 108505 25.01 | 7262 18.45 | 115767 |
| 3 – Hybrid/ Blended Learning | 57059 13.15 | 4826 12.26 | 61885 |
| Total | 433907 | 39356 | 473263 |
| Students' 2021 Instructional Option Cycle 7 | English Learner Status | | |
| | No | Yes | Total |
| 1 – On-site / Traditional | 296912 69.29 | 30495 78.92 | 327407 |
| 2 – Virtual/ Remote Learning | 79379 18.52 | 4508 11.67 | 83887 |
| 3 – Hybrid/ Blended Learning | 52229 12.19 | 3635 9.41 | 55864 |
| Total | 428520 | 38638 | 467158 |

At Cycle 2 students with disabilities were similar with all other students in that two thirds were enrolled in on-site/traditional learning. By the end of the year more students with disabilities moved back to on-site/ traditional learning as indicted in Table 21.

Table 21. Cycles 2 and 7 Percent of Students by Instructional Option and Students with and without Disabilities

| Students' 2021 Instructional Option Cycle 2 | Students with Disabilities Status | | |
|---|-----------------------------------|----------------|--------|
| | No | Yes | Total |
| 1 – Onsite / Traditional | 255290 62.30 | 40321 63.54 | 295611 |
| 2 – Virtual/ Remote Learning | 100525 24.53 | 15242 24.02 | 115767 |
| 3 – Hybrid/ Blended Learning | 53986 13.17 | 7899 12.45 | 61885 |
| Total | 409801 | 63462 | 473263 |
| Students' 2021 Instructional Option Cycle 2 | Students with Disabilities Status | | |
| | No | Yes | Total |
| 1 – Onsite / Traditional | 280828 69.58 | 46579 73.32 | 327407 |
| 2 – Virtual/ Remote Learning | 74083 18.35 | 9804 15.43 | 83887 |
| 3 – Hybrid/ Blended Learning | 48716 12.07 | 7148 11.25 | 55864 |
| Total | 403627 | 63531 | 467158 |

Prior achievement of students selecting different instructional options is another factor to consider. In general, the 2019 achievement of students opting for virtual learning at the beginning of the school year included slightly higher proportions of students in the lowest readiness levels and needing the most support (Figures 28-30). Notice that combining the In Need of Support and Close readiness levels demonstrates the students enrolled in virtual/ remote learning options were 5, 10, and 6 more percentage points compared to the students in on-site and hybrid learning options for ELA, math, and science, respectively.



Figures 28 and 29. Grades 5 – 10 students’ prior achievement (2019) and October 1 instructional option for ELA and Math.

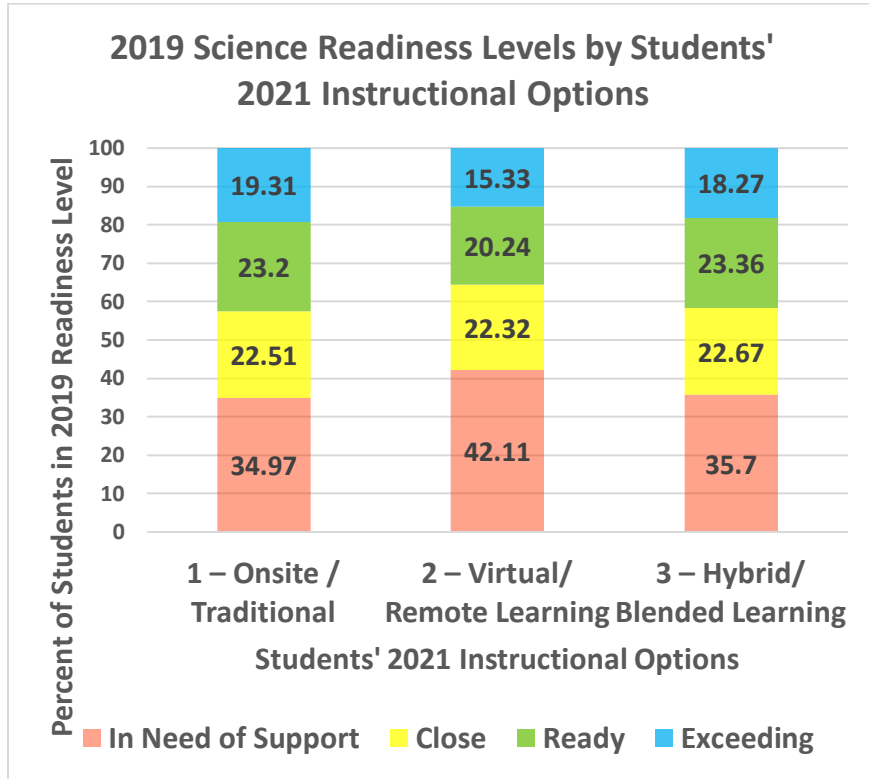


Figure 30. Grades 5 – 10 students' prior achievement (2019) and October 1 instructional option for science.

An overview of an analysis of instructional option relative to ACT Aspire score gains is provided in the achievement section of this report.

Participation in State-Required Assessments in 2021

State Summary Percent Tested

The state level percent tested for 2021 remained above 95% for all subjects and subgroups except the Black/ African American subgroup for ELA (94.73%). Subgroup percent of students tested statistics are provided in Table 22. Note that the Black/ African American subgroup percent tested rounds to 95% which is the figure reported when using whole number statistics. ELA scores require students to complete three subject tests: Reading, English, Writing. Each year a number of students do not complete all three tests and therefore count as not tested for the purposes of state and federal accountability even though they may have completed two of the three tests. Given the increased number of students attending virtually among the Black/African American subgroup, the requirement to test at a proctored testing site, and the requirement to complete the three subject tests for an ELA composite score—the 94.73% in ELA for this subgroup represents the herculean efforts expended by districts serving students virtually in 2021.

Table 22. State-Level Percent Tested for ELA, Math, and Science

| | Percent Tested ELA | Number Expected to Test ELA | Percent Tested Math | Number Expected to Test Math | Percent Tested Science | Number Expected to Test Science |
|------------------------------|--------------------|-----------------------------|---------------------|------------------------------|------------------------|---------------------------------|
| 1 All | 97.27 | 295473 | 97.52 | 295496 | 97.46 | 295477 |
| 2 Black/ African American | 94.73 | 58315 | 95.33 | 58316 | 95.24 | 58306 |
| 3 Hispanic/ Latino | 97.89 | 41709 | 98.02 | 41708 | 98.01 | 41710 |
| 4 White | 97.97 | 175848 | 98.14 | 175870 | 98.08 | 175861 |
| 5 Economically Disadvantaged | 96.82 | 187579 | 97.13 | 187595 | 97.06 | 187594 |
| 6 English Learners | 98.09 | 34392 | 98.23 | 34389 | 98.2 | 34392 |
| 7 Students with Disabilities | 96.08 | 41325 | 96.48 | 41330 | 96.25 | 41320 |
| 8 Gifted | 98.4 | 32218 | 98.55 | 32221 | 98.51 | 32223 |
| 9 Military Dependent | 96.95 | 3931 | 97.36 | 3933 | 97.15 | 3933 |
| 10 Homeless | 95.99 | 7310 | 96.33 | 7310 | 96.29 | 7313 |
| 11 Foster Child | 95.8 | 1427 | 96.01 | 1428 | 96.01 | 1428 |
| 12 Migrant | 97.42 | 2018 | 97.87 | 2016 | 97.67 | 2018 |
| 13 Male | 97.18 | 151628 | 97.45 | 151637 | 97.36 | 151625 |
| 14 Female | 97.36 | 143845 | 97.6 | 143859 | 97.56 | 143852 |

The percent tested in Arkansas in 2021 was roughly at or above the 95% tested rate ranging from 95% to 98% for all groups. This is down two percentage points from 99% in prior years when the rate ranged from 97% to 99% among all groups.

Substantively more schools and districts missed the 95% percent tested mark for groups of students. The variation in participation rates at the school level is higher than in prior years. Thus, it is important to make inferences about achievement of students considering who was and who was not tested when the percent tested is below 95% at these levels. Schools and districts testing less than 95% may not have results for a representative population of their students.

Summary of School-Level and District-Level Percent Tested

The drop in the percentage of students tested at the state level is not equally distributed among schools/districts and/or their subgroups. Part of the variation comes from differences in subgroup populations among schools. The number of subgroups meeting minimum N can vary from year to year as the population in the state varies. Tables 23 and 24 demonstrate this. The number of schools in Table 23 excludes feeder schools (no tested grades) and for the subgroups the number of schools with percent tested data include only subgroups meeting the minimum N of 15. Of the 1041 schools the 45 feeder schools do not have percent tested data in the preliminary statistics.

Table 23 indicates the number of schools for 2021 and 2019 (1 All); the 2021 count of schools with a subgroup meeting minimum N of 15; and the 2021 and 2019 percent of schools with a subgroup meeting minimum N of 15.

Most variations are within a percentage point. Increased percentages beyond one percent are highlighted in green. Decreased percentages are in yellow.

Table 23. Count of Schools with Subgroups Meeting Minimum N in 2019 and 2021

| | 2021 Count of Schools with Group/ Subgroup with at least 15 students | 2021 Percent of Schools with a Group/ Subgroup with at least 15 students | 2019 Percent of Schools with a Group/ Subgroup with at least 15 students |
|-------------------------------------|---|---|---|
| 1 All | 996 | 100.0 | 100.0 |
| 2 Black/ African American | 491 | 49.3 | 49.6 |
| 3 Hispanic/ Latino | 533 | 53.5 | 51.8 |
| 4 White | 918 | 92.2 | 93.0 |
| 5 Economically Disadvantaged | 987 | 99.1 | 99.2 |
| 6 English Learners | 422 | 42.4 | 39.2 |
| 7 Students with Disabilities | 891 | 89.5 | 88.1 |
| 8 Gifted | 695 | 69.8 | 75.0 |
| 9 Military Dependent | 60 | 6.0 | 3.9 |
| 10 Homeless | 159 | 16.0 | 19.0 |
| 11 Foster Child | 1 | 0.1 | 0.1 |
| 12 Migrant | 21 | 2.1 | 2.0 |
| 13 Male | 984 | 98.8 | 99.0 |
| 14 Female | 982 | 98.6 | 98.7 |

Generally, in 2021 more schools have Hispanic/Latino, English Learner, Students with Disabilities, and Military Dependent subgroups that will be included in accountability. Fewer schools have at least 15 students in the Gifted and Homeless subgroups.

The remainder of this report will focus on the seven groups/subgroups included in ESSA accountability: All Students, Black/African American, Hispanic/Latino, White, Economically Disadvantaged, English Learners, and Students with Disabilities.

Table 24 indicates the number of districts for 2021 and the percent of districts with a subgroup large enough to meet the minimum n of 15 for accountability. Again, these vary from year to year due to population changes.

Table 24. Count of Districts with Subgroups Meeting Minimum N in 2019 and 2021

| | Count of Districts | Percent of Districts with Subgroup N >= 15 |
|-------------------------------------|---------------------------|--|
| 1 All Students | 260 | |
| 2 Black/ African American | 148 | 56.9 |
| 3 Hispanic/Latino | 177 | 68.1 |
| 4 White | 249 | 95.8 |
| 5 Economically Disadvantaged | 260 | 100.0 |
| 6 English Learners | 130 | 50.0 |
| 7 Students with Disabilities | 251 | 96.5 |

Schools and Districts with Less Than 95% Tested

At the school and district levels there are significant increases from 2019 to 2021 in the number of schools and districts with groups/subgroups where less than 95% of students enrolled were tested. Tables 25 and 26 provide the counts by subject and subgroup at the school and district levels, respectively.

Table 25. 2021 and 2019 Number of Schools and Subgroups with Less Than 95% Tested

| | 2021 | | | 2019 | | |
|-------------------------------------|------|-----|-----|------|-----|-----|
| | ELA | MAT | SCI | ELA | MAT | SCI |
| 1 All Students | 107 | 91 | 100 | 14 | 14 | 14 |
| 2 Black/ African American | 108 | 93 | 97 | 14 | 12 | 13 |
| 3 Hispanic/Latino | 55 | 49 | 50 | 11 | 9 | 10 |
| 4 White | 95 | 86 | 86 | 17 | 16 | 14 |
| 5 Economically Disadvantaged | 128 | 114 | 120 | 15 | 15 | 15 |
| 6 English Learners | 43 | 42 | 38 | 7 | 5 | 07 |
| 7 Students with Disabilities | 207 | 190 | 211 | 35 | 30 | 335 |
| Total Groups | 743 | 665 | 702 | 113 | 101 | 108 |

Approximately 10.7%, 9.1%, and 10.0% of schools did not meet the 95% tested mark for the All students group for ELA, math, and science in 2021 compared to approximately 1% in 2019. By dividing the number of subgroups in Table 25 by the number of schools with tested grades and at least 15 students in the group you can figure the percent of schools testing less than 95% for all groups.

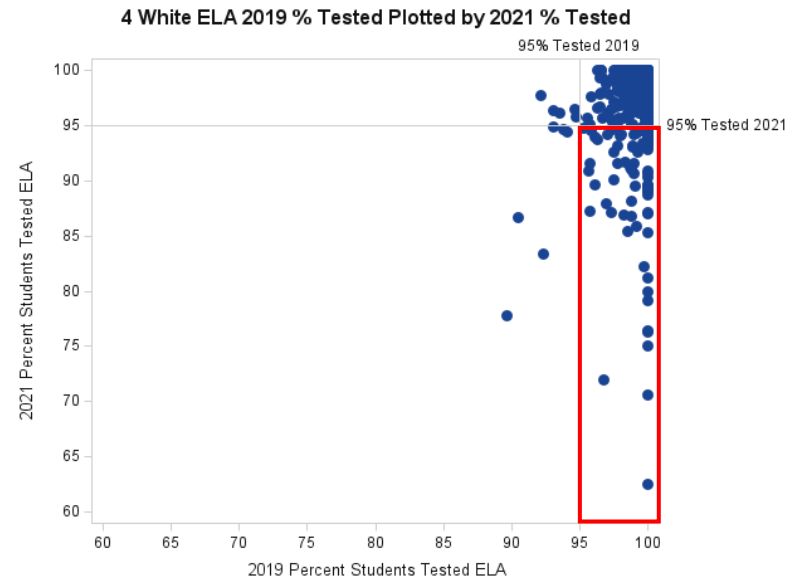
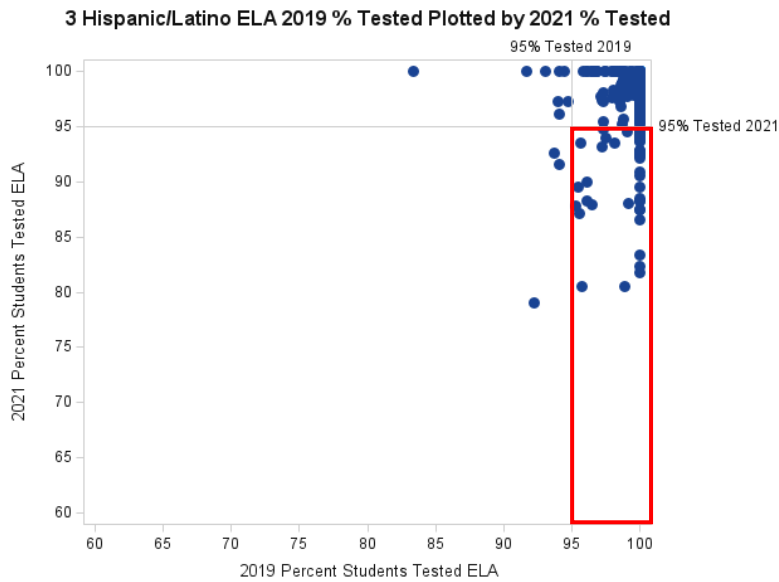
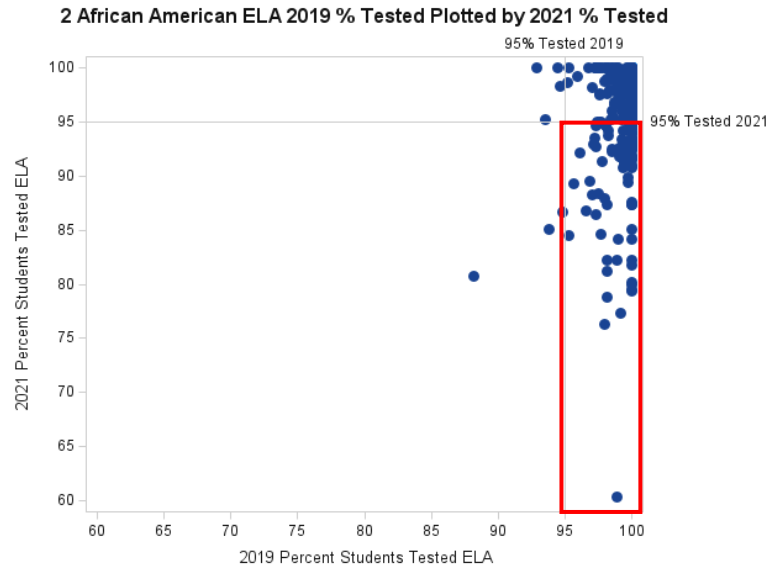
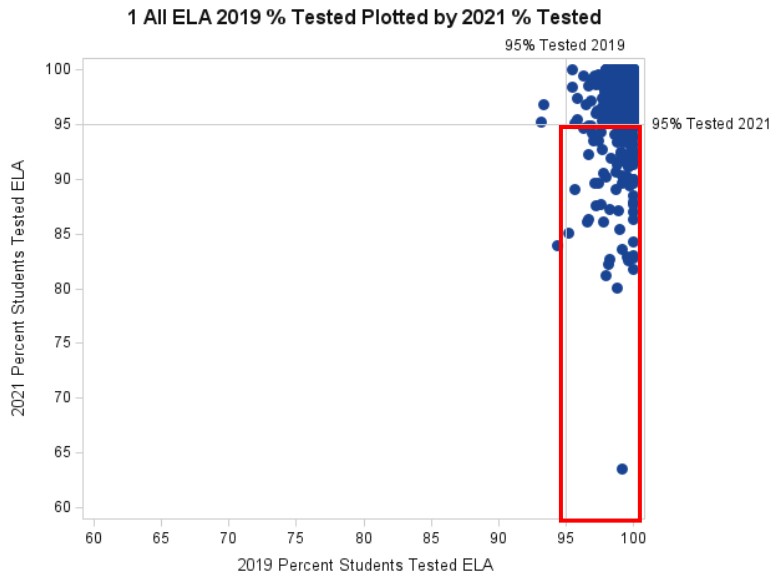
At the district level 10.4%, 8.9%, and 9.6% of districts did not meet the 95% tested mark. Almost double the number of schools and districts did not meet 95% tested mark for Students with Disabilities compared to the All Students group.

Table 26. 2021 and 2019 Number of Districts and Subgroups with Less Than 95% Tested

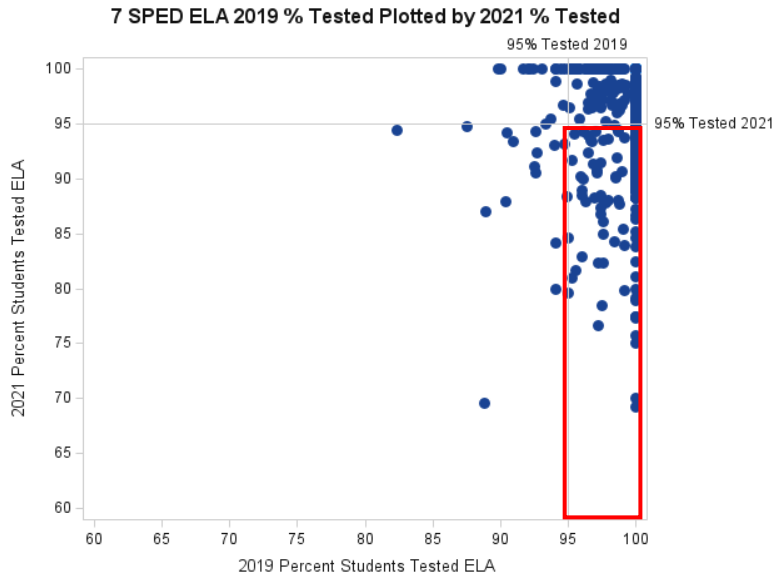
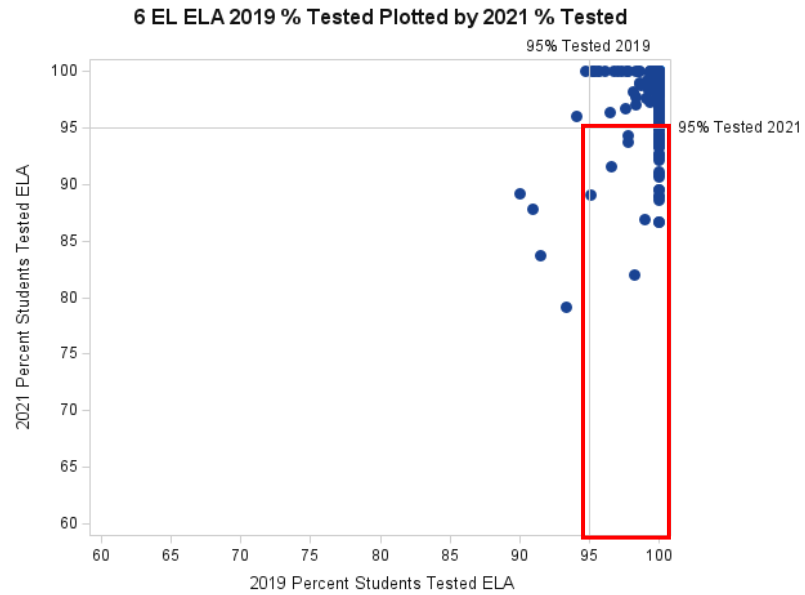
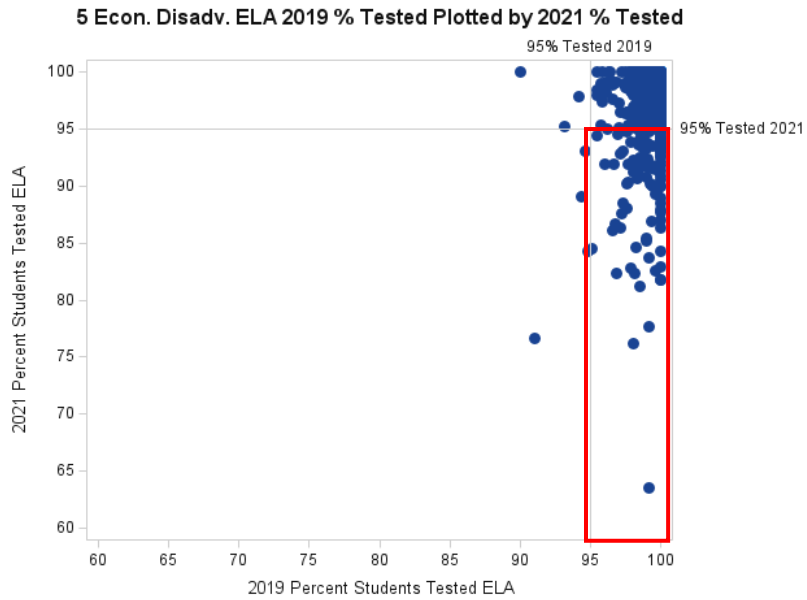
| Subgroup | 2021 | | | 2019 | | |
|-------------------------------------|------|-----|-----|------|-----|-----|
| | ELA | MAT | SCI | ELA | MAT | SCI |
| 1 All | 27 | 23 | 25 | 4 | 4 | 4 |
| 2 Black/ African American | 29 | 25 | 27 | 5 | 5 | 5 |
| 3 Hispanic/Latino | 20 | 19 | 20 | 1 | 0 | 1 |
| 4 White | 28 | 22 | 24 | 6 | 6 | 6 |
| 5 Economically Disadvantaged | 27 | 23 | 25 | 5 | 5 | 5 |
| 6 English Learners | 10 | 8 | 9 | 3 | 3 | 3 |
| 7 Students with Disabilities | 48 | 42 | 82 | 7 | 6 | 7 |
| Total Groups | 189 | 162 | 212 | 31 | 29 | 31 |

As mentioned previously, this impacts the comparability of the scores for these schools and districts and their subgroups since the students tested may not be representative of the actual student population. Before comparing school or district performance it will be important to know whether at least 95% of students were tested.

Figures 31-38 provide scatterplots comparing 2019 percent tested to 2021 for all schools by subgroup. ELA is used to illustrate the pattern evident in all subjects. These charts illustrate the change in the spread of schools' percent tested rates in 2019 and 2021. Schools within the red rectangle area tested 95% of students in 2019 but were under 95% in 2021. Subgroups are presented to inform differences in the spread of school percent tested rates among groups.



Figures 31 – 34. Scatterplot of schools’ percent tested in 2019 and 2021 for ELA for all students, Black/ African American, Hispanic/ Latino, and White students.

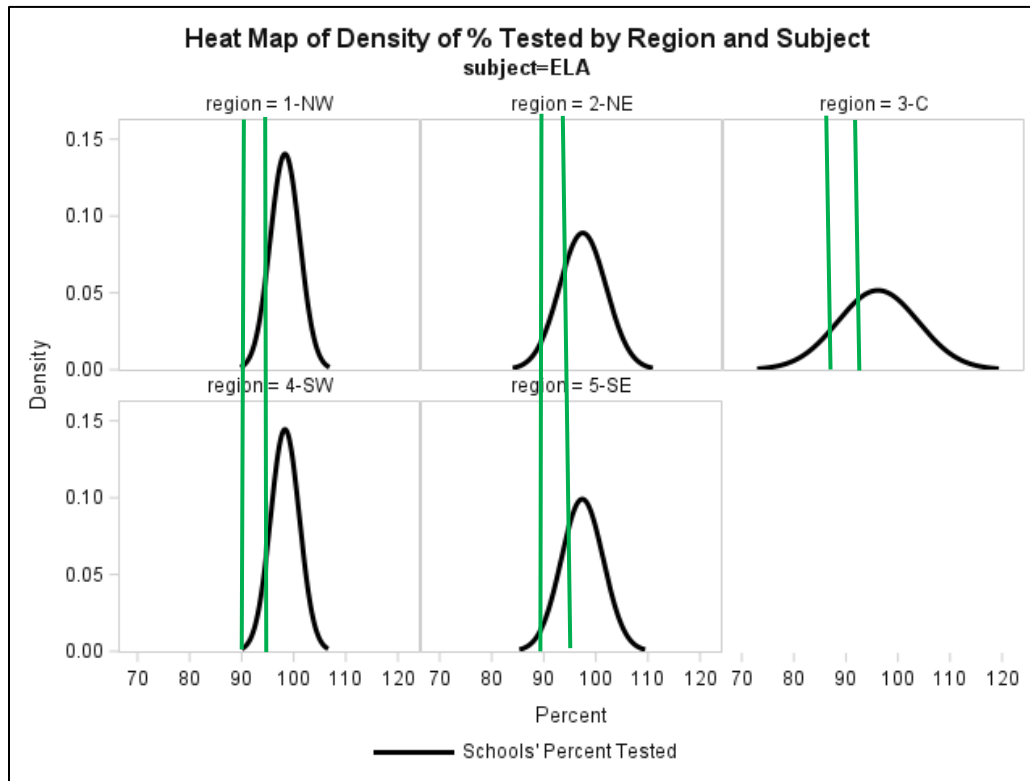


The red rectangles highlight illustrate the difference in 2021 school-level percent tested compared to prior years. Annually, schools below 95% are notified by the Public School Accountability Division and required to develop a plan to address raising participation rates to 95% or higher. Note that subgroups are more likely to have less than 95% tested in any given year, but the number of schools is typically much lower with the subgroups Hispanic/Latino, White, and students with disabilities subgroups having the most schools testing less than 95% in both 2019 and 2021.

Figures 35 – 38. Scatterplot of schools’ percent tested in 2019 and 2021 for ELA for economically disadvantaged students, English Learners, and students with disabilities.

Regional Percent Tested Patterns Overall

Regional analysis of the distributions of schools meeting 95% tested reveal patterns for lower and/or more spread out tested rates in the Northeast, Central, and Southeast regions. Figure 31 provides a density plot of the percent tested by region. The shape of each plot reveals the characteristics of percent tested for each region. The green vertical lines indicate the 90% and 95% reference points. Notice that the Northwest and Southwest regions have tall curves that are very narrow. Both regions had schools that tested below 95% but there were fewer, and the percent tested values were closer to the 95% mark when they were below 95%. This is indicated by the higher density between the green vertical lines marking 95% to 100% tested. The Northeast and Southeast regions' curves are less peaked and a little more spread out indicating more schools spread out below the 95% tested mark as well as below 90% tested. The Central region curve shows the most spread among the values of percent tested and this region had the most schools, proportionally, that were below the 95% tested mark and at much lower levels than 90%. The ELA, math, and science curves have similar shapes so the ELA curves are presented to communicate the regional differences.



Subgroup analysis (not pictured here) indicated a higher percentage of schools did not meet 95% tested for African American students in all regions, particularly the Northwest, Northeast and Central regions. The Northeast and Central regions had higher percentages of schools not meeting 95% tested for Hispanic/Latino and English Learners. The Central region had the highest percentage of schools not meeting 95% tested for white students in the Central region. The Central and Southeast regions had higher percentages of schools that did not meet 95% tested for and economically disadvantaged students.

All regions had a higher percentage of schools that did not meet 95% tested for students with disabilities with Central, Southeast, and Northeast regions with highest percent of schools not meeting 95% tested for this subgroup.

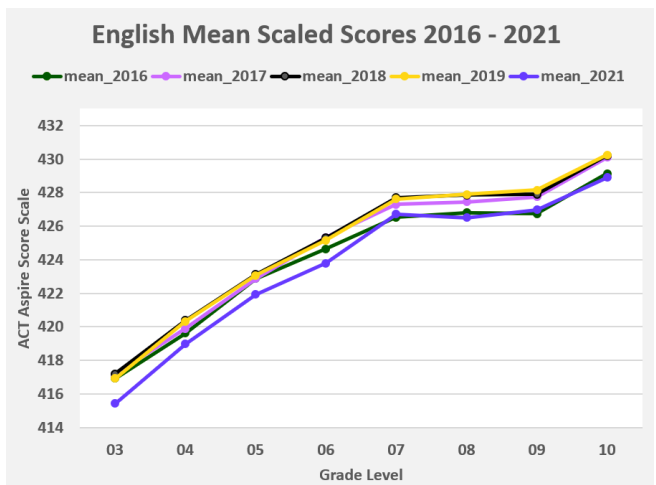
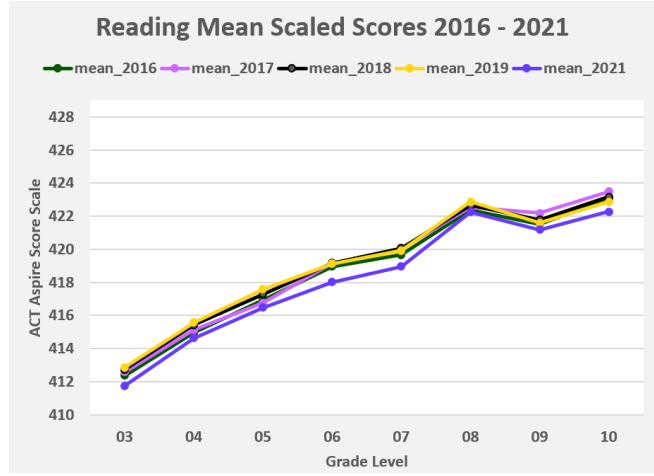
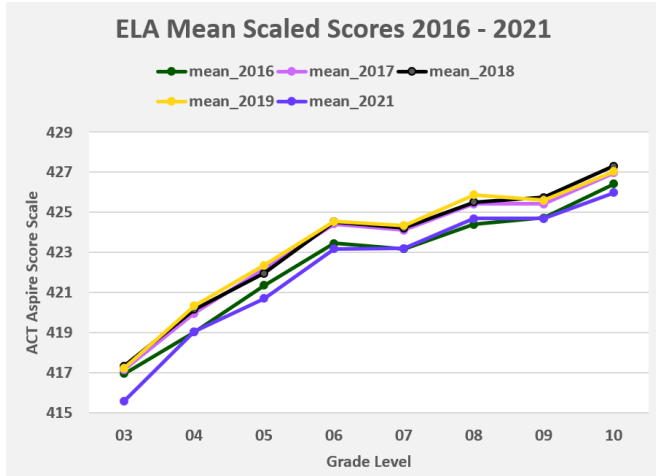
In summary, it is important to keep in mind that test-score based inferences must be mindful that the group of tested students may not be representative of the school population in race/ethnicity, program status, and prior achievement given the variation of participation rates regionally and among groups of students within and across schools.

Figure 31. Regional patterns in percent tested for 2021.

Achievement and Growth Outcomes for 2021

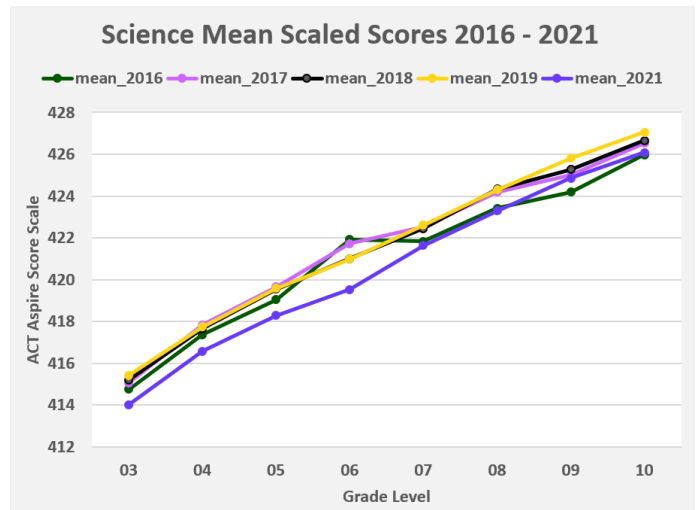
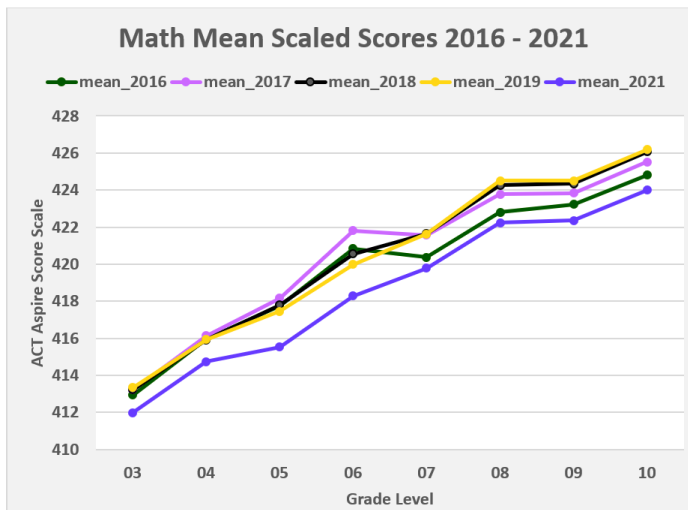
Changes in Average Achievement Scores

The ACT Aspire average scaled scores were down in 2021 compared to 2019 as was expected. Figures 32 – 37 provide state averages by subject for 2016 through 2021.

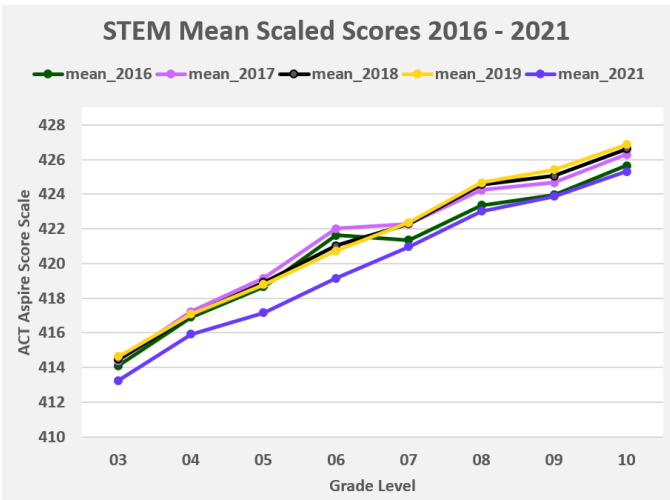


Statewide, average reading scores were most like prior years declining, on average across grade levels, -0.86 scale score points. Grade 9 declined -0.42 scale score points, the lowest among all grade levels, and Grades 6 and 7 had the highest average decline of -1.12 and -1.11 scale score points, respectively. ELA had declines just slightly larger (-1.28), on average across grade levels, when compared to reading. Grade 3 had the biggest decline in ELA, in part due to a higher proportion of third graders who did not complete a scoreable writing test compared to the proportion in prior years. English (-1.27) saw a similar decline in average scale scores across grade levels as compared to ELA with Grade 3 declining the most.

Figures 32 – 34. Average ACT Aspire scores 2016 through 2021 in ELA, reading, and English.



Figures 35 – 36. Average ACT Aspire scores 2016 through 2021 in math and science.



Statewide average math scores exhibited the largest declines among all subjects with -1.82 scale score point decline across all grade levels. Grades 8 through 10 averaged over -2.00 declines. In science, the average decline across grade levels was 1.16 with Grades 3 and 6 declining the most (-1.42 and -1.47, respectively). STEM scores, which are a composite of math and science, exhibited a decline of -1.49 scale score points across grade levels.

Tables for these charts are provided in the Appendix.

Figure 37. Average ACT Aspire scores 2016 through 2021 in STEM.

These findings were validated in a separate analysis of score decline conducted by ACT, Inc. on behalf of the Division of Elementary and Secondary Education. ACT, Inc. used a propensity score matching methodology to establish similar samples of students for 2019 and 2021 on initial achievement, gender, race/ethnicity, disability, economic, and English learner characteristics. They analyzed scale score declines for Grades 3 – 10 and for the Grade 11 ACT and standardized the differences. They found that scale score declines were evident at all grade levels relative to 2019 with the greatest declines in math. Using a composite score, they determined that scale score declines were approximately 0.20 to 0.26 standard deviations for Grades 3 through 6 with declines in Grades 7, 9, and 10 at approximately 0.17 standard deviations. Declines at Grade 8 and on the Grade 11 ACT were the lowest at approximately 0.10 standard deviation units.

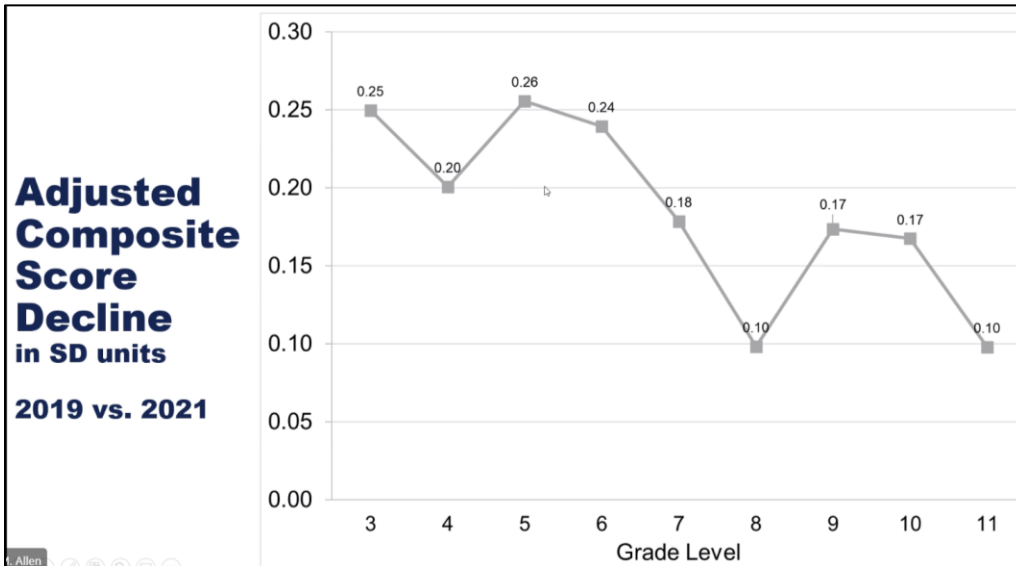


Figure 38. Composite Score declines expressed in standard deviation units.

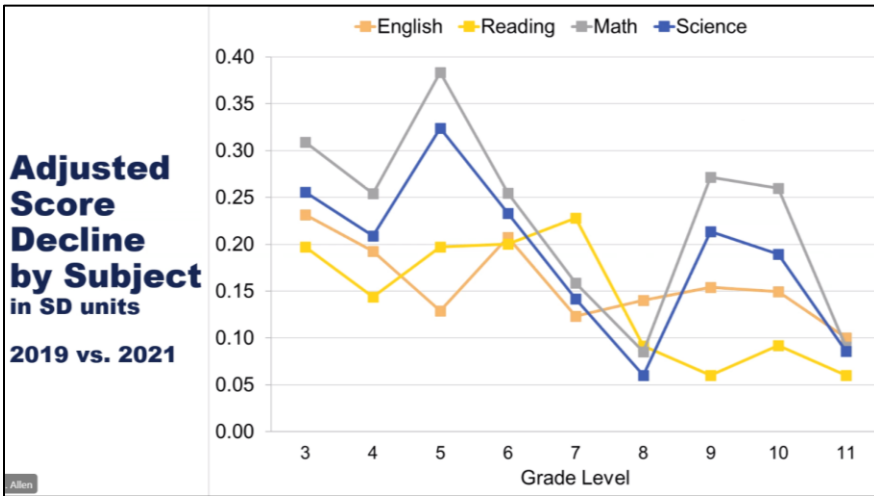


Figure 39. Subject score declines.

In general, white students had the largest declines in ACT Aspire scores except at Grades 3 and 4 where African American students had approximately 0.07 standard deviation larger decline and 0.05 standard larger decline for Grades 3 and 4, respectively, compared to white students.

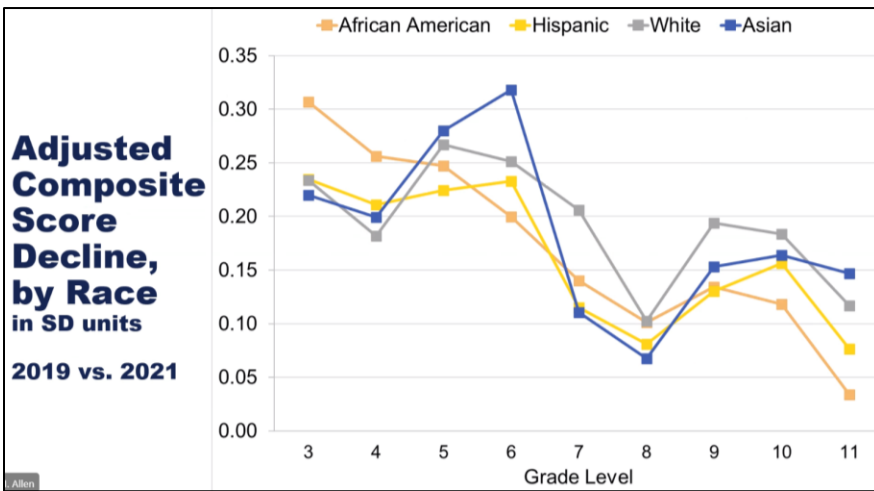


Figure 40. Composite score declines by race/ethnicity.

For subgroups of students the ACT, Inc. analysis indicated that composite score declines were less severe for students with disabilities/ English Learners’ scores declined less than English-only students except in Grades 3, 4, and 8.

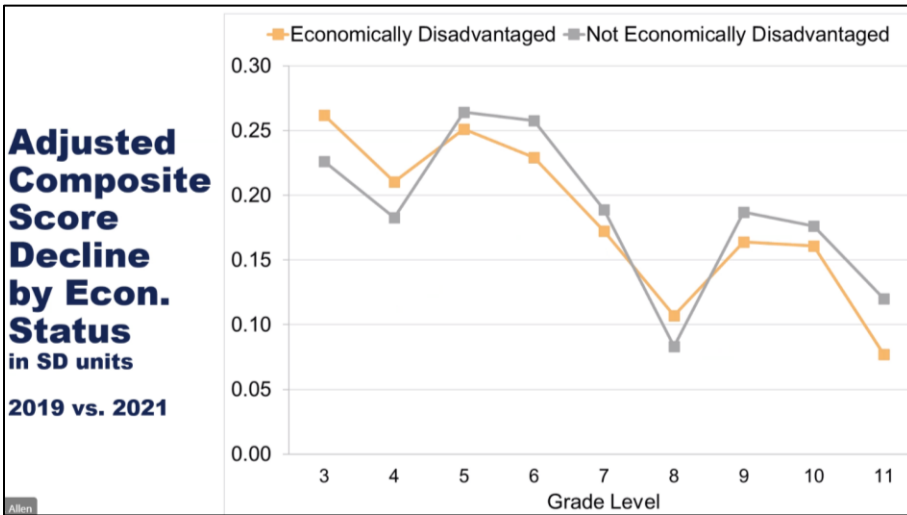


Figure 41. Composite score declines by economic disadvantage.

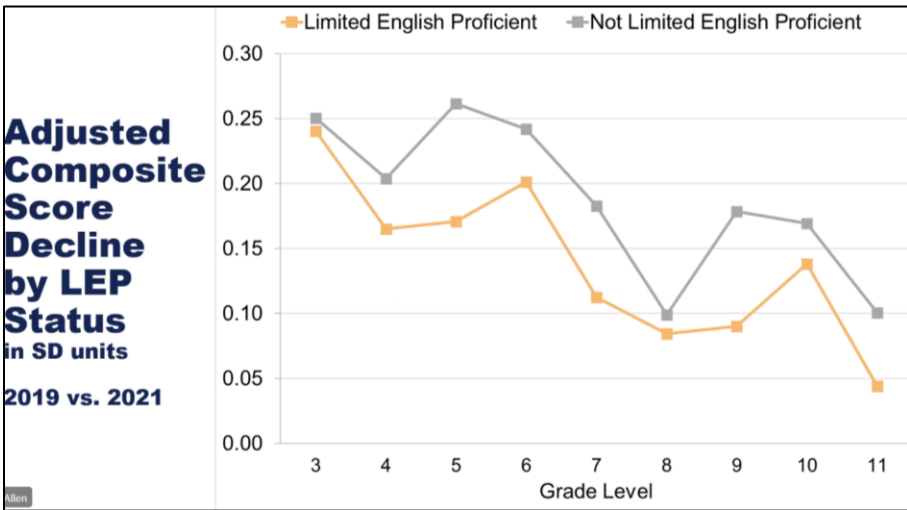


Figure 42. Composite score declines by English Learner status.

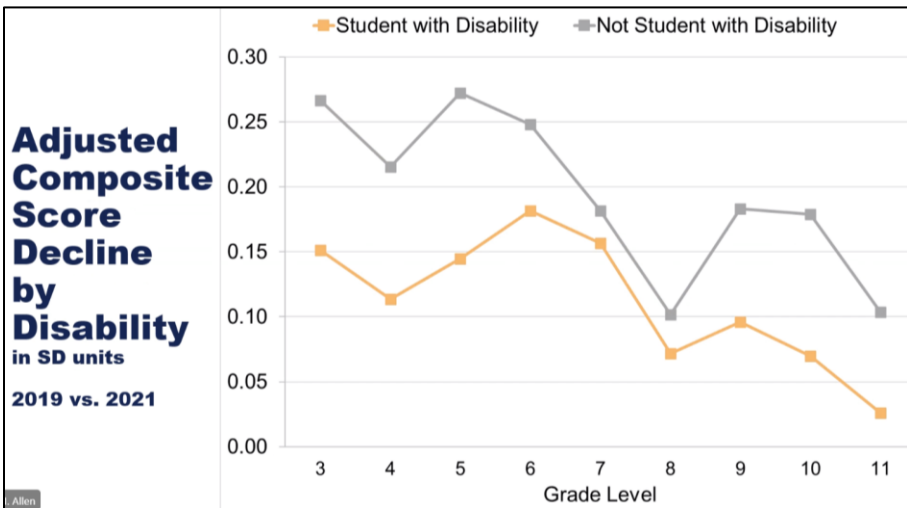


Figure 43. Composite score declines by disability status.

These results provide additional and convergent information for understanding the average scale score declines exhibited in 2021.

Changes in Readiness Levels

The percentages of students meeting grade-level readiness dropped in 2021 compared to prior years. Achievement and growth in achievement data are publicly available for Arkansas at the state level and by school, district, and grade at <https://myschoolinfo.arkansas.gov/>

Tables and charts in this section provide an overview of the more detailed achievement data that are available online. The differences in percentages meeting or exceeding grade-level readiness from 2019 to 2021 are added to facilitated inferences from the data. ELA consists of three subject tests: Reading, English, and Writing. When students submit unscorable writing entries (illegible, not English, off topic, and blank/no response) they receive the lowest possible scale score for Writing. This enables students who complete all three subject tests—with an unscorable writing entry—to have an ELA score calculated and to count as tested for ELA. However, this also depresses the ELA scores. In 2021 the number of unscorable writing entries doubled compared to prior years. This explains why you may see bigger declines overall in ELA compared to the other subjects as indicated in Tables 27 – 31.

Table 27. Change in Percentage of Students Ready/ Exceeding for ELA 2019 to 2021

| Demographic Group | 2021 % Ready/Exceeds | 2019 % Ready/Exceeds | Difference |
|--------------------------------|----------------------|----------------------|------------|
| All Students | 36.89 | 44.59 | -7.7 |
| African-American | 16.60 | 23.93 | -7.3 |
| Hispanic | 30.34 | 37.28 | -6.9 |
| White | 44.57 | 52.62 | -8.1 |
| Economically Disadvantaged | 27.34 | 34.72 | -7.4 |
| Migrant | 18.11 | 22.91 | -4.8 |
| English Learner | 24.55 | 32.23 | -7.7 |
| Students with Disabilities | 6.41 | 10.77 | -4.4 |
| Not Economically Disadvantaged | 53.29 | 62.78 | -9.5 |
| Not English Learner | 38.53 | 46.14 | -7.6 |
| Not Students with Disabilities | 41.78 | 49.83 | -8.1 |
| Homeless | 21.50 | 29.17 | -7.7 |
| Foster Care | 20.70 | 27.66 | -7.0 |
| Military Dependent | 46.13 | 58.11 | -12.0 |
| Former English Learner | 52.92 | 67.52 | -14.6 |
| Gifted and Talented | 84.58 | 89.03 | -4.5 |

Table 27 indicates that students not economically disadvantaged, former English Learners, and military dependents had the largest declines and these declines were more substantial compared to declines for other groups in ELA. Additionally, students without disabilities declined twice as much as students with disabilities. One hypothesis could be that these students did not complete scorable writing entries and thus received the lowest scale score in writing. This is plausible given that you do not see double digit declines for English and Reading for these same groups.

Table 28. Change in Percentage of Students Ready/ Exceeding for English 2019 to 2021

| Demographic Group | 2021 % Ready/Exceeds | 2019 % Ready/Exceeds | Difference |
|--------------------------------|----------------------|----------------------|------------|
| All Students | 64.88 | 69.93 | -5.1 |
| Caucasian | 72.20 | 76.95 | -4.8 |
| African-American | 46.23 | 52.30 | -6.1 |
| Hispanic | 58.42 | 63.40 | -5.0 |
| Economically Disadvantaged | 57.22 | 62.61 | -5.4 |
| Migrant | 44.74 | 49.25 | -4.5 |
| English Learner | 52.69 | 58.58 | -5.9 |
| Students with Disabilities | 22.87 | 26.64 | -3.8 |
| Not Economically Disadvantaged | 78.01 | 83.32 | -5.3 |
| Not English Learner | 66.50 | 71.36 | -4.9 |
| Not Students with Disabilities | 71.23 | 75.93 | -4.7 |
| Homeless | 51.12 | 56.85 | -5.7 |
| Foster Care | 48.54 | 55.45 | -6.9 |
| Military Dependent | 74.34 | 81.74 | -7.4 |
| Former English Learner | 84.33 | 90.72 | -6.4 |
| Gifted and Talented | 96.27 | 96.98 | -0.7 |

Table 29. Change in Percentage of Students Ready/ Exceeding for Reading 2019 to 2021

| Demographic Group | 2021 % Ready/Exceeds | 2019 % Ready/Exceeds | Difference |
|--------------------------------|----------------------|----------------------|------------|
| All Students | 36.29 | 41.27 | -5.0 |
| Caucasian | 43.74 | 49.17 | -5.4 |
| African-American | 17.25 | 21.24 | -4.0 |
| Hispanic | 29.47 | 33.65 | -4.2 |
| Economically Disadvantaged | 27.66 | 32.20 | -4.5 |
| Migrant | 18.87 | 21.76 | -2.9 |
| English Learner | 24.11 | 28.94 | -4.8 |
| Students with Disabilities | 7.45 | 9.08 | -1.6 |
| Not Economically Disadvantaged | 51.08 | 57.86 | -6.8 |
| Not English Learner | 37.91 | 42.83 | -4.9 |
| Not Students with Disabilities | 40.65 | 45.74 | -5.1 |
| Homeless | 23.06 | 27.07 | -4.0 |
| Foster Care | 21.63 | 26.39 | -4.8 |
| Military Dependent | 46.20 | 54.73 | -8.5 |
| Former English Learner | 49.13 | 58.59 | -9.5 |
| Gifted and Talented | 80.53 | 83.82 | -3.3 |

The biggest declines for grade-level readiness were in mathematics as is evident by most groups decline by double digits with a few exceptions (Table 30). These declines are explored more thoroughly later in this section.

Table 30. Change in Percentage of Students Ready/ Exceeding for Math 2019 to 2021

| Demographic Group | 2021 % Ready/Exceeds | 2019 % Ready/Exceeds | Difference |
|--------------------------------|----------------------|----------------------|------------|
| All Students | 36.14 | 47.18 | -11.0 |
| Caucasian | 44.11 | 55.42 | -11.3 |
| African-American | 13.88 | 24.47 | -10.6 |
| Hispanic | 30.77 | 41.47 | -10.7 |
| Economically Disadvantaged | 26.93 | 37.93 | -11.0 |
| Migrant | 20.73 | 29.04 | -8.3 |
| English Learner | 27.68 | 38.52 | -10.8 |
| Students with Disabilities | 8.31 | 13.13 | -4.8 |
| Not Economically Disadvantaged | 51.97 | 64.21 | -12.2 |
| Not English Learner | 37.26 | 48.26 | -11.0 |
| Not Students with Disabilities | 40.61 | 52.46 | -11.9 |
| Homeless | 22.22 | 31.69 | -9.5 |
| Foster Care | 19.91 | 30.28 | -10.4 |
| Military Dependent | 47.48 | 62.86 | -15.4 |
| Former English Learner | 52.39 | 69.79 | -17.4 |
| Gifted and Talented | 77.77 | 86.39 | -8.6 |

Table 31. Change in Percentage of Students Ready/ Exceeding for Science 2019 to 2021

| Demographic Group | 2021 % Ready/Exceeds | 2019 % Ready/Exceeds | Difference |
|--------------------------------|----------------------|----------------------|------------|
| All Students | 34.19 | 40.09 | -5.9 |
| Caucasian | 42.68 | 48.95 | -6.3 |
| African-American | 12.76 | 17.83 | -5.1 |
| Hispanic | 26.39 | 31.75 | -5.4 |
| Economically Disadvantaged | 25.00 | 30.43 | -5.4 |
| Migrant | 15.27 | 20.03 | -4.8 |
| English Learner | 21.66 | 27.40 | -5.7 |
| Students with Disabilities | 8.00 | 10.88 | -2.9 |
| Not Economically Disadvantaged | 49.98 | 57.87 | -7.9 |
| Not English Learner | 35.85 | 41.68 | -5.8 |
| Not Students with Disabilities | 38.39 | 44.57 | -6.2 |
| Homeless | 20.69 | 25.35 | -4.7 |
| Foster Care | 18.23 | 23.87 | -5.6 |
| Military Dependent | 44.54 | 53.83 | -9.3 |
| Former English Learner | 45.93 | 56.32 | -10.4 |
| Gifted and Talented | 80.39 | 84.26 | -3.9 |

Cohort Analyses

To explore the changes in achievement and the impact on students' readiness levels more deeply we isolated two cohorts of students to compare estimated typical change in achievement to the change in achievement following disruptions caused by the COVID-19 Pandemic. This provides a context for isolating whether the change in achievement is beyond what would typically occur for students progressing through the grade levels without the Pandemic disruptions which are hypothesized to have negatively impacted students' learning (Table 32).

Table 32. Progression of Students for Cohort 1 and Cohort 2

| Grade Progression | Cohort 1: Students Experienced Typical Learning Operations | | Cohort 2: Students Experienced Pandemic-Impacted Learning Operations | |
|-------------------|--|------------------|--|------------------|
| | 2017 Initial Grade | 2019 Grade Level | 2019 Initial Grade Level | 2021 Grade Level |
| Grade 3 to 5 | 3 | 5 | 3 | 5 |
| Grade 4 to 6 | 4 | 6 | 4 | 6 |
| Grade 5 to 7 | 5 | 7 | 5 | 7 |
| Grade 6 to 8 | 6 | 8 | 6 | 8 |
| Grade 7 to 9 | 7 | 9 | 7 | 9 |
| Grade 8 to 10 | 8 | 10 | 8 | 10 |

- Cohort 1: Students in Grades 3 through 8 in 2017 completing Grades 5 through 10 in 2019.
- Cohort 2: Students in Grades 3 through 8 in 2018 completing Grades 5 through 10 in 2021.

We compared the changes in the percent of students meeting or exceeding grade-level readiness at each grade level in 2019 for Cohort 1 and in 2021 for Cohort 2. The net change in the percent of students ready or exceeding between the two cohorts demonstrates the proportion of Cohort 2 students losing ground compared to Cohort 1 students' change in grade-level readiness in 2019 which we refer to as typical change. For Cohort 2, the declines from 2019 to 2021 were adjusted based on the typical gains or declines as estimated using Cohort 1 changes from 2017 to 2019.

Generally, students at the highest readiness levels, Exceeding followed by Ready, lost ground in the 2019 cohort. Green cells indicate the percent Ready/Exceeding typically increased. Yellow cells indicate decreases. Tables 33-35 provide an example using Cohorts 1 and 2 for the Grade 3 to 5 progression.

Table 33. ELA Change in Achievement for Cohorts 1 and 2

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|--------|-------------|-------|-------|--------|---------------------------------------|
| | N | 2017 | 2019 | Change | N | 2019 | 2021 | Change | |
| Average Scale Score | 34688 | 417.3 | 422.5 | 5.3 | 32462 | 417.3 | 420.8 | 3.5 | |
| % Ready/Exceeding | | 41.7 | 45.2 | 3.5 | | 41.3 | 34.2 | -7.0 | -10.5 |
| % Level 1 | | 39.2 | 31.7 | -7.4 | | 38.4 | 41.0 | 2.6 | |
| % Level 2 | | 19.1 | 23.1 | 3.9 | | 20.3 | 24.7 | 4.4 | |
| % Level 3 | | 18.3 | 22.6 | 4.3 | | 17.8 | 20.9 | 3.1 | |
| % Level 4 | | 23.4 | 22.6 | -0.8 | | 23.4 | 13.3 | -10.1 | |

Table 34. Math Change in Achievement for Cohorts 1 and 2

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34771 | 413.3 | 417.6 | 4.3 | 32493 | 413.4 | 415.6 | 2.2 | |
| % Ready/ Exceeding | | 59.3 | 50.0 | -9.3 | | 62.8 | 35.0 | -27.8 | -18.5 |
| % Level 1 | | 13.3 | 9.8 | -3.5 | | 13.6 | 17.2 | 3.6 | |
| % Level 2 | | 27.4 | 40.2 | 12.8 | | 23.5 | 47.7 | 24.2 | |
| % Level 3 | | 36.2 | 39.4 | 3.1 | | 39.0 | 30.4 | -8.6 | |
| % Level 4 | | 23.1 | 10.6 | -12.4 | | 23.9 | 4.7 | -19.2 | |

Table 35. Science Change in Achievement for cohorts 1 and 2

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34769 | 415.2 | 419.7 | 4.5 | 32484 | 415.5 | 418.4 | 2.9 | |
| % Ready/ Exceeding | | 38.8 | 41.4 | 2.6 | | 39.7 | 32.6 | -7.0 | -9.7 |
| % Level 1 | | 44.4 | 32.3 | -12.1 | | 40.9 | 38.7 | -2.3 | |
| % Level 2 | | 16.8 | 26.3 | 9.5 | | 19.4 | 28.7 | 9.3 | |
| % Level 3 | | 16.0 | 27.1 | 11.1 | | 16.9 | 22.8 | 5.9 | |
| % Level 4 | | 22.7 | 14.3 | -8.5 | | 22.7 | 9.8 | -12.9 | |

In ELA, Grades 3 and 4 had the largest net declines of -10.5 and -12.4 percentage points in the percent of students meeting grade-level readiness cut scores. The average loss in percent ready or exceeding for Cohort 2, accounting for typical gain/loss as estimated by Cohort 1, was -9.35 percentage points. Cohort 2 had the largest decreases in math in the percent of students meeting grade-level readiness cut scores with an average -10.35 percentage points drop. Grade 5 students who started in Grade 3 in 2019 had the steepest drops with -18.50 percentage point decline in the percent ready or exceeding grade level standards in Grade 5. Grades 10 (-12.20) and 6 (-10.80) had the next largest declines. Science had an average percentage point decline of -5.38. Grades 3 and 4 had the largest percentage point loss in percent of student ready or exceeding in science (-9.70 and -7.0, respectively). Tables for additional grade levels are provided in the Appendix.

Achievement at the district and school levels exhibited greater variation in 2021. There were districts and schools that exhibited less severe declines, and—in some cases schools and districts demonstrated gains from 2019 to 2021. In fact, 12 percent of schools improved their ESSA School Index score from 2019 to 2021 (Table 36). The reverse is also true—roughly 80% of schools declined in their ESSA School Index scores.

Table 36. Percentage of Schools Declining and Improving ESSA School Index Score 2019 to 2021

| Subgroup | Progress of Schools on ESSA School Index Score 2019 to 2021 | |
|----------------------------|---|----------|
| | Declined | Improved |
| All Students | 88.21 | 11.79 |
| Black/ African American | 87.25 | 12.75 |
| Hispanic | 81.03 | 18.97 |
| White | 85.27 | 14.75 |
| Economically Disadvantaged | 87.29 | 12.71 |
| English Learners | 84.59 | 15.41 |
| Students with Disabilities | 72.73 | 27.27 |

Table 37. ESSA School index Scores 2018 through 2021 by Grade Span

| Grade Span | All ESSA Index Scores in this table are the adjusted ESSA Index Scores | Number of Schools | Mean | Standard Deviation | Minimum | Maximum |
|-----------------------|--|-------------------|-------|--------------------|---------|---------|
| 1 - Elementary Level | 2021 ESSA School Index Score | 523 | 66.93 | 8.85 | 44.49 | 90.42 |
| | 2019 ESSA School Index Score | 512 | 71.41 | 7.31 | 51.63 | 89.77 |
| | 2018 ESSA School Index Score | 506 | 71.12 | 7.32 | 51.36 | 90.19 |
| 2 - Middle Level | 2021 ESSA School Index Score | 200 | 65.87 | 7.44 | 46.89 | 85.66 |
| | 2019 ESSA School Index Score | 191 | 70.35 | 7.20 | 52.35 | 86.98 |
| | 2018 ESSA School Index Score | 188 | 70.23 | 7.17 | 50.06 | 87.55 |
| 3 - High School Level | 2021 ESSA School Index Score | 312 | 63.25 | 7.58 | 32.72 | 92.85 |
| | 2019 ESSA School Index Score | 303 | 66.93 | 7.67 | 31.60 | 96.37 |
| | 2018 ESSA School Index Score | 301 | 66.68 | 7.70 | 30.84 | 97.40 |

Both the greater variation in ESSA School Index scores (scores across a wider range) and the differing shifts of the distributions of ESSA School Index Scores based on grade span (Table 37) support the hypothesis that *how* districts and schools responded to disruptions and supported learning differed and resulted in different outcomes for students. Investigating how districts and schools responded to support learning and curating the strategies that were successful in growing students in achievement might inform other schools in Arkansas. This work is currently underway at the Division of Elementary and Secondary Education.

Growth in Achievement

Growth in achievement was of interest in addition to aggregate statistics regarding the achievement level of students in Arkansas in 2021. The growth metric used for federal and state accountability is a longitudinal student growth model that nests students' scores within each student within their grade level statewide. Students' score histories are run through a multi-level model to produce estimates of achievement for the current year (predicted score) and residuals (difference between predicted and actual score in current year). This model is called a value-added model as it controls for student-level factors that are not controlled by the school (race/ethnicity, economic status, disability status, English Learner status). Further, by using score histories each student's prior achievement trajectory improves the estimate or predicted score. Students at all points on the achievement continuum are expected to grow in achievement based on how they have achieved over up to four years of prior achievement scores.

School growth scores are the average of all full-academic year students' scores in the school and indicate whether—on average—students are meeting or exceeding expected growth in achievement or losing ground relative to expected

growth. A score of 80 indicates that, on average, students in the school are meeting expected growth. Scores above 80 indicate more students are meeting or exceeding expected growth. Scores below 80 indicate students, on average, are not meeting expected growth. The further above or below 80, the greater the average gain or loss relative to expected growth.

School-level growth scores for 2021 exhibit much greater variation in students' growth in achievement among schools. That means that how much students grew relative to how much they were expected to grow, on average, differed a lot more in 2021 than in any prior year. Most of the increased variability is accounted for at the elementary grade span Table 38).

Table 38. School Value-Added Growth Scores 2018 – 2021

| School Value-Added Growth Scores | | | | | | |
|----------------------------------|-------------|-------------------|-------|--------------------|---------|---------|
| Grade Span | Year | Number of Schools | Mean | Standard Deviation | Minimum | Maximum |
| 1 - Elementary Level | 2021 | 523 | 80.26 | 4.15 | 60.73 | 91.75 |
| | 2019 | 512 | 80.69 | 3.26 | 71.19 | 88.59 |
| | 2018 | 506 | 80.40 | 3.56 | 69.17 | 89.57 |
| 2 - Middle Level | 2021 | 200 | 80.38 | 2.43 | 74.18 | 85.78 |
| | 2019 | 191 | 80.90 | 2.25 | 75.51 | 86.76 |
| | 2018 | 188 | 80.69 | 2.41 | 74.38 | 86.39 |
| 3 - High School Level | 2021 | 312 | 79.62 | 2.00 | 74.69 | 85.63 |
| | 2019 | 305 | 79.73 | 2.33 | 68.65 | 86.50 |
| | 2018 | 303 | 79.74 | 2.19 | 73.85 | 86.53 |

Schools in the elementary grade span had an average value-added growth score of 80.26 with schools' average scores ranging from 61 to 92 in 2021—a 31 score point spread. In prior years the spread of schools' average value-added growth scores was 18 score points with a range of 71 to 89 in 2019 and a spread of 21 score points with a range of 69 to 90 in 2018. At the middle school grade span the average value-added growth score of 80.38 is typical compared to prior years as is the high school grade span average value-added growth score of 79.62.

The internal analysis conducted by ACT, Inc. looked at composite score gains and by instructional option using propensity score weighted samples representative of the students enrolled in each instructional option based on race/ethnicity, economic, English Learner, and disability status as well as prior achievement. They limited the analysis to students who remained in one instructional option from October 1 through the 2021 testing window. Figure 31 exhibits the findings for composite score gains for each group. The analysis used a cohort approach that followed students in initial grade in 2019 and grade level in 2021 and compared gains in 2021 by instructional option to gains for representative cohort in 2017 to 2019.

These data provide another lens through which to understand change in student achievement. As indicated in Figure 43, 2021 gains were lower across the board compared to gains students made from 2018 to 2019. Among the instructional options, on-site students gained more than hybrid students and virtual students had the lowest gains.

It is important to note that virtual and hybrid learning was executed in many different ways across schools and districts and that these findings are intended to report on the results for students in these options during Pandemic implementation of these different options and not support inferences about these instructional options under normal circumstances.

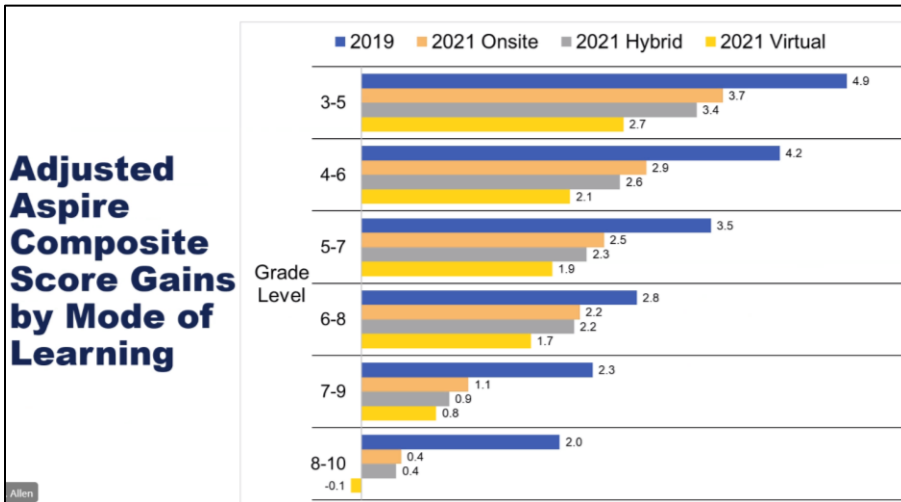


Figure 43. Adjusted Composite Score gains by instructional option.

Regarding achievement and growth in achievement, it is evident that how districts and schools responded to ensure continuity of learning varied more than in typical years as evidenced by the greater differences in achievement and growth metrics in 2021 compared to prior years.

Graduation Rate

2021 State-Level Graduation Rate Summary

In a year where the expected impacts of the COVID19 pandemic have been much anticipated to be negative, it is notable that the 2021 4-Year and 5-Year Graduation Rates demonstrate that Arkansas students graduated at similar rates in their 4th year as in 2020, and for the 5-Year adjusted cohort, more students were able to earn their high school diploma given this fifth year.

The trends in Arkansas’s four- and five-year graduation rates are provided in Table 39.

Table 39. Four- and Five-Year Adjusted Cohort Graduation Rate Trend

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------|------|------|------|------|------|------|------|------|
| 4-Year ACGR | 87.0 | 85.7 | 87.0 | 88.0 | 89.2 | 87.6 | 88.8 | 88.5 |
| 5-Year ACGR | * | * | * | 90.9 | 90.7 | 90.2 | 89.0 | 90.2 |

*The 5-Year ACGR was not calculated in years prior to 2017 except for modeling purposes.

Arkansas’s four-year graduation rate was relatively stable in 2021 compared to 2020. Note, each year the 4-Year Graduation Rate reflects a different population of students therefore some year-to-year variation is expected. The decrease in 2019 is explained, in part, by a refinement in data procedures that kept students in the adjusted cohort if the student was indicated as a transfer to another school in Arkansas but never reappeared in the cohort at another Arkansas school. Additional details regarding this change in 2019 are provided in the Appendix section *Special Note for 2019 Four-Year Graduation Rates*.

Subgroup and Special Populations

4-Year Adjusted Cohort Graduation Rate

The number of expected graduates was slightly lower in 2021 than in prior years, yet the steadiness of the graduation rates during the COVID19 Pandemic is notable. At the state level the 4-year graduation rate remained relatively flat in 2021 at 88.46 in 2021 compared to 88.80 in 2020. Most race/ethnicity groups demonstrated similar trends except for African American and Hawaiian Pacific Island students who demonstrated a slight uptick in rates as indicated in Figure 44. The Native American subgroup had the largest decline from 2020 rates.

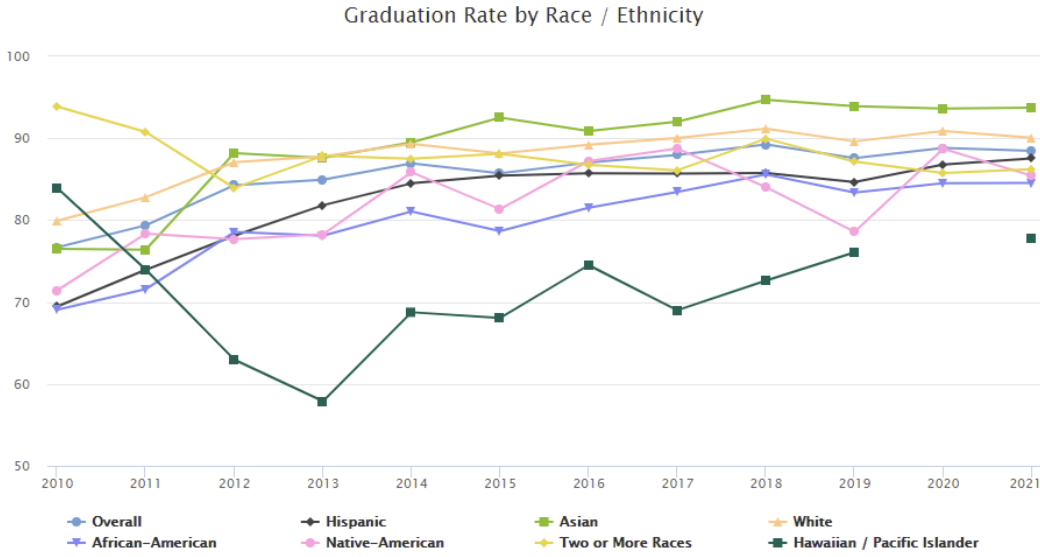


Figure 44. Ethnic/Race subgroup 4-year graduation rate trends.

Figure 45 provides the 4-year graduation rate trends for special populations. Note that only students in foster care declined in graduation rate from 2019 to 2020. Notably, some of the most at-risk populations such as homeless students and those in foster care demonstrated a relatively stable rate in 2021 during the COVID 19 pandemic. Students who were military dependents and students who were migrant had the largest declines in graduation rate. The other groups generally followed the overall pattern for all students.

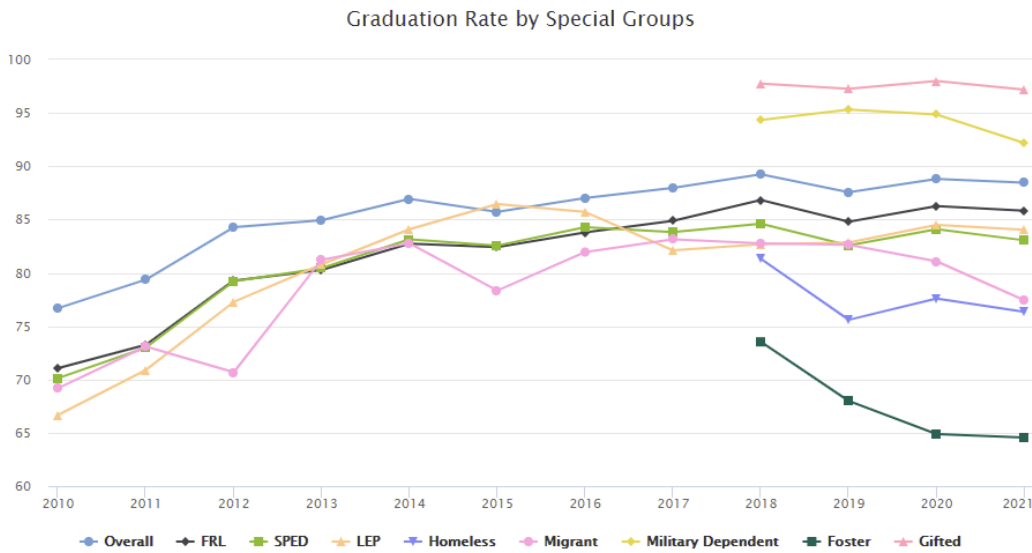


Figure 45. Special population subgroup 4-year graduation rate trends.

Table 40 provides the count of actual and expected graduates in the 4-year cohort at the state level.

Table 40. Four-Year Adjusted Cohort Graduation Rates with Actual and Expected Graduates Counts

| Demographic Group | 2021 Number of Expected Graduates | 2021 Number of Actual Graduates | 2021 Graduation Rate | 2020 Number of Expected Graduates | 2020 Number of Actual Graduates | 2020 Graduation Rate |
|--------------------------------|-----------------------------------|---------------------------------|----------------------|-----------------------------------|---------------------------------|----------------------|
| All Students | 35942 | 31795 | 88.46 | 36785 | 32666 | 88.80 |
| Caucasian | 21922 | 19743 | 90.06 | 22526 | 20472 | 90.88 |
| African-American | 7127 | 6025 | 84.54 | 7513 | 6348 | 84.49 |
| Hispanic | 4835 | 4233 | 87.55 | 4816 | 4179 | 86.77 |
| Female | 17345 | 15834 | 91.29 | 17967 | 16407 | 91.32 |
| Male | 18597 | 18597 | 85.83 | 18818 | 16259 | 86.40 |
| Economically Disadvantaged | 24579 | 21096 | 85.83 | 24812 | 21405 | 86.27 |
| Migrant | 350 | 271 | 77.43 | 370 | 300 | 81.08 |
| English Learner | 3203 | 2692 | 84.05 | 3432 | 2900 | 84.50 |
| Students with Disabilities | 4560 | 3787 | 83.05 | 4447 | 3740 | 84.10 |
| Not Economically Disadvantaged | 11363 | 10699 | 94.16 | 11973 | 11261 | 94.05 |
| Not English Learner | 32739 | 29103 | 88.89 | 33353 | 29766 | 89.25 |
| Not Students with Disabilities | 31382 | 28008 | 89.25 | 32338 | 28926 | 89.45 |
| Homeless | 2337 | 1784 | 76.34 | 2512 | 1949 | 77.59 |
| Foster Care | 299 | 193 | 64.55 | 279 | 181 | 64.88 |
| Military Dependent | 447 | 412 | 92.17 | 389 | 369 | 94.86 |
| Gifted and Talented | 4683 | 4551 | 97.18 | 4610 | 4517 | 97.94 |

5-Year Adjusted Cohort Graduation Rate

The size of the 5-year adjusted cohort in 2021 was slightly larger than in 2020 in terms of expected graduates and graduated 1.2% more expected graduates in 2021 compared to 2020 indicating more students were able to be graduated in this extra year despite the challenges of the COVID19 pandemic. All race/ethnicity groups increased in the 5-year graduation rates in 2021 except for students of Two or More Races and Hawaiian/Pacific Islanders. Figure 46 illustrates the 5-year graduation rate trends for race/ethnicity groups.

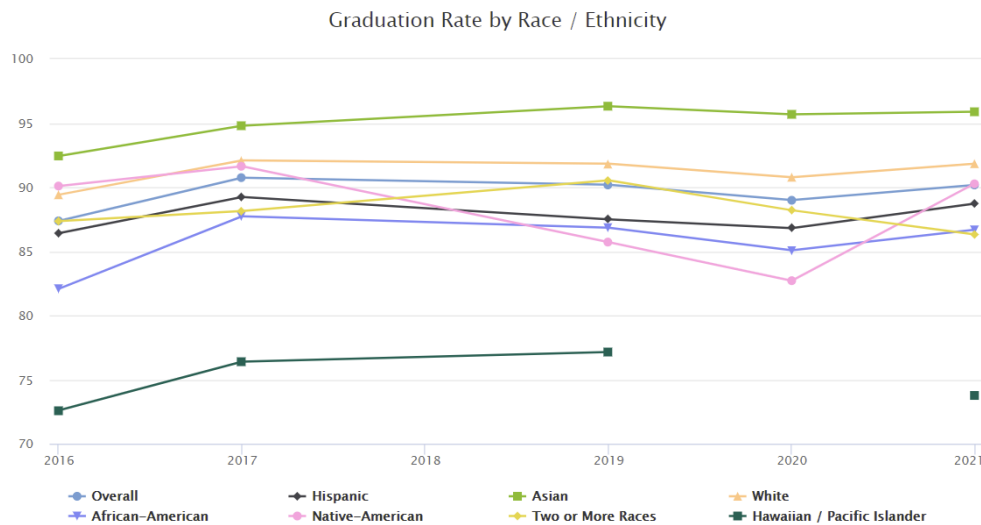


Figure 46. Ethnic/Race subgroup 5-year graduation rate trends.

For Arkansas’s 5-year graduation rates most special populations remained steady or increased in 2021 compared to 2020. The exceptions are the English Learners, Homeless students and students in Foster Care who experienced slight declines in the 5-year graduation rates in 2021. The 5-year graduation rate trends for special populations are provided in Figure 47.

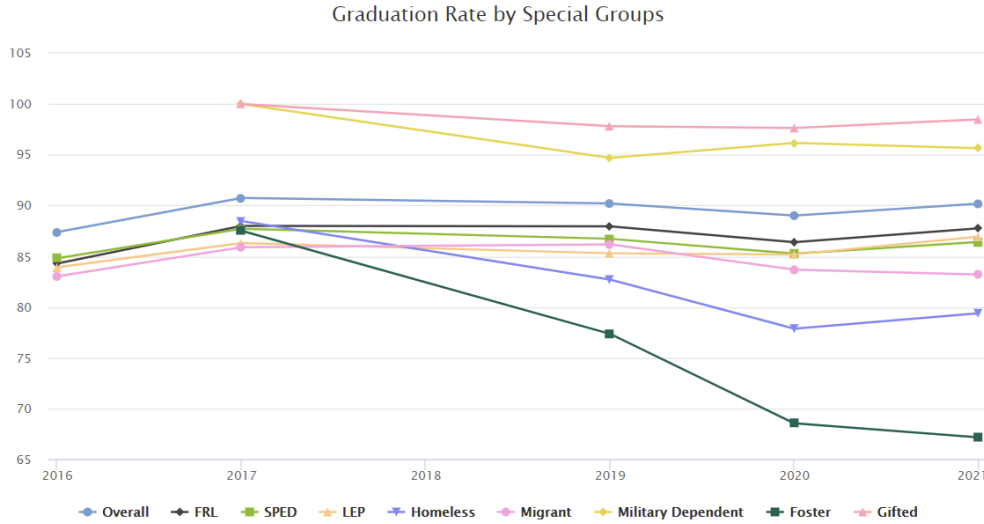


Figure 47. Special population subgroup 5-year graduation rate trends.

Table 41 provides the count of actual and expected graduates in the 5-year cohort at the state level.

Table 41. Five-Year Adjusted Cohort Graduation Rates with Actual and Expected Graduates Counts

| Demographic Group | 2021 Number of Expected Graduates | 2021 Number of Actual Graduates | 2021 Graduation Rate | 2020 Number of Expected Graduates | 2020 Number of Actual Graduates | 2020 Graduation Rate |
|--------------------------------|-----------------------------------|---------------------------------|----------------------|-----------------------------------|---------------------------------|----------------------|
| All Students | 36640 | 33038 | 90.17 | 36356 | 32354 | 88.99 |
| Caucasian | 22455 | 20619 | 91.82 | 22504 | 20428 | 90.78 |
| African-American | 7457 | 6464 | 86.68 | 7608 | 6473 | 85.08 |
| Hispanic | 4807 | 4265 | 88.72 | 4364 | 3787 | 86.78 |
| Female | 17901 | 16553 | 92.47 | 17653 | 16104 | 91.23 |
| Male | 18739 | 16485 | 87.97 | 18703 | 16250 | 86.88 |
| Economically Disadvantaged | 24772 | 21737 | 87.75 | 24435 | 21105 | 86.37 |
| Migrant | 369 | 307 | 83.20 | 404 | 338 | 83.66 |
| English Learner | 3431 | 2982 | 86.91 | 3035 | 2585 | 85.17 |
| Students with Disabilities | 4435 | 3832 | 86.40 | 4306 | 3671 | 85.25 |
| Not Economically Disadvantaged | 11868 | 11301 | 95.22 | 11921 | 11249 | 94.36 |
| Not English Learner | 33209 | 30056 | 90.51 | 33327 | 29769 | 89.34 |
| Not Students with Disabilities | 32205 | 29206 | 90.69 | 32050 | 28683 | 89.49 |
| Homeless | 2526 | 2005 | 79.37 | 2439 | 1899 | 77.86 |
| Foster Care | 277 | 186 | 67.15 | 251 | 172 | 68.53 |
| Military Dependent | 390 | 373 | 95.64 | 365 | 351 | 96.16 |
| Gifted and Talented | 4604 | 4534 | 98.48 | 4546 | 4437 | 97.60 |

Appendix

Enrollment Changes Over 50% Absolute Value

Table A. Districts with First Quarter Year-over-year Changes in Enrollment (gains or declines) at or above 50%

| District Name | Districts Over 50 Percentage Point Change in First Quarter ADM Year-Over-Year | | | | |
|--|---|-----------|-----------|-----------|-----------|
| | 2016-2017 | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 |
| ARKANSAS CONNECTIONS ACADEMY | | 120.35 | 59.31 | 30.56 | 75.02 |
| ARKANSAS VIRTUAL ACADEMY | 4.19 | 10.57 | 14.2 | 2.4 | 63.28 |
| ESTEM PUBLIC CHARTER SCHOOL | -0.17 | 35.05 | 55.77 | 4.64 | -0.73 |
| FRIENDSHIP ASPIRE ACADEMY PINE BLUFF | . | . | . | 116.28 | 29.04 |
| FUTURE SCHOOL OF FORT SMITH | . | 136.08 | 51.39 | -3.4 | -0.01 |
| HAAS HALL ACADEMY (Bentonville campus now in same LEA as all other campuses 7240700) | -0.3 | 97.65 | 37.98 | 7.74 | 40.97 |
| RESPONSIVE ED SOLUTIONS NORTHWEST ARKANSAS CLASSICAL ACADEMY | -0.81 | 1.93 | 16.88 | 53.29 | 4.37 |
| RESPONSIVE ED SOLUTIONS PREMIER HIGH SCHOOL OF NORTH LITTLE ROCK (new in 2020) | . | . | . | . | 115.39 |

Table B. Districts with Third Quarter Year-over-year Changes in Enrollment (gains or declines) at or above 50%

| | Districts Over 50 Percentage Point Change in Third Quarter ADM Year-Over-Year | | | | |
|--|---|-----------|-----------|-----------|-----------|
| | 2016-2017 | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 |
| 0442700-RESPONSIVE ED SOLUTIONS NORTHWEST ARKANSAS CLASSICAL ACADEMY | 1.02 | 2.34 | 16.19 | 52.42 | 4 |
| 0444700-ARKANSAS CONNECTIONS ACADEMY | . | 104.75 | 54.1 | 35.26 | 66.75 |
| 3544700-FRIENDSHIP ASPIRE ACADEMY PINE BLUFF | . | . | . | 112.04 | 27.45 |
| 6043700-ARKANSAS VIRTUAL ACADEMY | -2.74 | 15.13 | 15.13 | 4.12 | 60.83 |
| 6047700-ESTEM PUBLIC CHARTER SCHOOL | 0.08 | 34.61 | 55.75 | 3.94 | -0.5 |
| 6053700-RESPONSIVE ED SOLUTIONS PREMIER HIGH SCHOOL OF LITTLE ROCK | 5.13 | -5.61 | 3.61 | -7.18 | 51.4 |
| 6062700-RESPONSIVE ED SOLUTIONS PREMIER HIGH SCHOOL OF NORTH LITTLE ROCK | . | . | . | . | 58.98 |
| 6640700-FUTURE SCHOOL OF FORT SMITH | . | 120.21 | 49.75 | -1.39 | 5.26 |
| 7240700-HAAS HALL ACADEMY | 0.37 | 94.48 | 36.33 | 8.15 | 40.27 |

Achievement: Tables for Changes in Average Scale Score

Table C. ELA Average Scale Score Changes

| ELA | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|-----|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 416.96 | 417.17 | 417.34 | 417.24 | 415.59 |
| 04 | 419.04 | 419.97 | 420.16 | 420.34 | 419.06 |
| 05 | 421.37 | 422.19 | 421.97 | 422.36 | 420.72 |
| 06 | 423.46 | 424.43 | 424.54 | 424.55 | 423.18 |
| 07 | 423.18 | 424.11 | 424.22 | 424.35 | 423.21 |
| 08 | 424.40 | 425.42 | 425.51 | 425.87 | 424.69 |
| 09 | 424.74 | 425.42 | 425.76 | 425.61 | 424.69 |
| 10 | 426.42 | 426.97 | 427.31 | 427.05 | 425.98 |

Table D. Reading Average Scale Score Changes

| Reading | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 412.37 | 412.59 | 412.73 | 412.87 | 411.75 |
| 04 | 414.96 | 415.14 | 415.44 | 415.59 | 414.65 |
| 05 | 416.94 | 416.75 | 417.29 | 417.60 | 416.48 |
| 06 | 418.95 | 419.16 | 419.17 | 419.13 | 418.02 |
| 07 | 419.66 | 420.01 | 420.07 | 419.93 | 418.97 |
| 08 | 422.37 | 422.54 | 422.67 | 422.88 | 422.25 |
| 09 | 421.52 | 422.19 | 421.78 | 421.60 | 421.18 |
| 10 | 423.09 | 423.50 | 423.18 | 422.88 | 422.27 |

Table E. English Average Scale Score Changes

| English | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 416.94 | 417.17 | 417.20 | 416.92 | 415.44 |
| 04 | 419.63 | 419.90 | 420.39 | 420.34 | 418.99 |
| 05 | 422.87 | 422.87 | 423.13 | 423.06 | 421.94 |
| 06 | 424.64 | 425.34 | 425.32 | 425.17 | 423.79 |
| 07 | 426.53 | 427.30 | 427.71 | 427.63 | 426.73 |
| 08 | 426.81 | 427.45 | 427.86 | 427.91 | 426.52 |
| 09 | 426.75 | 427.75 | 427.90 | 428.16 | 426.97 |
| 10 | 429.15 | 430.10 | 430.21 | 430.25 | 428.91 |

Table F. Math Average Scale Score Changes

| Math | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 412.93 | 413.22 | 413.22 | 413.34 | 411.99 |
| 04 | 415.95 | 416.13 | 415.92 | 415.93 | 414.75 |
| 05 | 417.76 | 418.16 | 417.8 | 417.46 | 415.54 |
| 06 | 420.83 | 421.81 | 420.56 | 419.98 | 418.29 |
| 07 | 420.38 | 421.56 | 421.65 | 421.62 | 419.79 |
| 08 | 422.81 | 423.77 | 424.27 | 424.51 | 422.24 |
| 09 | 423.23 | 423.84 | 424.34 | 424.50 | 422.36 |
| 10 | 424.80 | 425.51 | 426.07 | 426.19 | 424.00 |

Table G. Science Average Scale Score Changes

| Science | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 414.76 | 415.07 | 415.20 | 415.43 | 414.01 |
| 04 | 417.37 | 417.84 | 417.65 | 417.74 | 416.58 |
| 05 | 419.05 | 419.66 | 419.54 | 419.58 | 418.28 |
| 06 | 421.92 | 421.72 | 421.00 | 420.99 | 419.52 |
| 07 | 421.83 | 422.51 | 422.44 | 422.60 | 421.63 |
| 08 | 423.41 | 424.19 | 424.34 | 424.30 | 423.29 |
| 09 | 424.19 | 425.01 | 425.27 | 425.81 | 424.86 |
| 10 | 425.98 | 426.53 | 426.65 | 427.05 | 426.08 |

Table H. STEM Average Scale Score Changes

| STEM | Average Scale Score 2016 | Average Scale Score 2017 | Average Scale Score 2018 | Average Scale Score 2019 | Average Scale Score 2021 |
|------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 03 | 414.10 | 414.40 | 414.46 | 414.64 | 413.26 |
| 04 | 416.91 | 417.23 | 417.04 | 417.08 | 415.92 |
| 05 | 418.66 | 419.16 | 418.92 | 418.78 | 417.17 |
| 06 | 421.63 | 422.01 | 421.03 | 420.74 | 419.16 |
| 07 | 421.36 | 422.28 | 422.30 | 422.37 | 420.97 |
| 08 | 423.36 | 424.24 | 424.56 | 424.66 | 423.03 |
| 09 | 423.97 | 424.68 | 425.06 | 425.42 | 423.87 |
| 10 | 425.65 | 426.29 | 426.62 | 426.88 | 425.31 |

Growth in Achievement: Complete Set of Cohort Analysis Tables

A trend analysis was conducted to attempt to put the 2021 results in perspective. We hypothesized that if we review the change in summary statistics for students over a period of time in which normal learning operations were employed (2017 through 2019), this may serve as a point of comparison to evaluate the change in summary statistics for students over the time period encompassing 2020 missing summative assessment scores (2019 through 2021).

In this analysis, students with scores in Grades 3-8 in 2017 were linked to their score records in 2019. The same process was followed to link students in 2019 to their scores in 2021. The results for their initial grade level and the student at the grade level two years later are reported along with the change over that time period.

| Grade Progression | Students Experienced Typical Learning Operations | | Students Experienced Pandemic-Impacted Learning Operations | |
|-------------------|--|------------------|--|------------------|
| | 2017 Initial Grade | 2019 Grade Level | 2019 Initial Grade Level | 2021 Grade Level |
| Grade 3 to 5 | 3 | 5 | 3 | 5 |
| Grade 4 to 6 | 4 | 6 | 4 | 6 |
| Grade 5 to 7 | 5 | 7 | 5 | 7 |
| Grade 6 to 8 | 6 | 8 | 6 | 8 |
| Grade 7 to 9 | 7 | 9 | 7 | 9 |
| Grade 8 to 10 | 8 | 10 | 8 | 10 |

Information provided for each cohort includes: the summary statistic (Average, % Ready/Exceeding, % at each readiness level), number of students in the cohort, initial year achievement, achievement two years/grade levels later, and the change in achievement over that time.

Note that in 2018 the cut scores for ELA were updated. To ensure comparability of the 2017 cohort with the 2019 cohort we updated the percentage meeting readiness benchmark and readiness levels by using the 2018 cut scores applied to students 2017 scores.

Generally, students at the highest readiness levels, Exceeding followed by Ready, lost ground in the 2019 cohort. Green cells indicate the percent Ready/Exceeding typically increased. Yellow cells indicate decreases.

Grade 3 students Progressing to Grade 5 in Two Years

Students in Grade 3 in 2019 that were in Grade 5 in 2021 demonstrated the largest losses in achievement. Comparison of the statistics for the progress in achievement for students in the 2017 cohort to the students in the 2019 cohort indicates the 2019 cohort of students lost ground relative to the progress of the cohort that experienced typical learning operations.

For some grade cohorts, even under typical learning operations, the change in achievement indicates the cohort lost ground relative to the expected achievement based on grade level cut scores. We calculated the difference in percentage point change between the two cohorts by subtracting the Change for the 2017 cohort from the change for the 2019 cohort. Negative values for the column *Difference in Percentage Point Change* indicates a greater loss than in typical year. Size of negative value gives a sense of magnitude of loss. State Reporting Category summaries for each subject, available in the Arkansas Aspire CCSSO file provided by ACT may illuminate the areas of likely unfinished learning. For example, for students in Grade 3 in 2019 and Grade 5 in 2021, the categories of Number and Operations-Fractions, Geometry, and Measurement and Data were particularly low. This may have resulted from the March 20 move to AMI where the focus was moved to mastery of essential standards already learned and not new standards. Students in this cohort were in the last quarter of Grade 4 where geometry, consolidating understanding and learning to operate on fractions, and concepts of measurement and data may have been on the docket for the fourth quarter prior to pandemic emergency closure. Districts and schools may vary in this due to variations in when some concepts are taught during the school year.

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34688 | 417.3 | 422.5 | 5.3 | 32462 | 417.3 | 420.8 | 3.5 | |
| % Ready/Exceeding | | 41.7 | 45.2 | 3.5 | | 41.3 | 34.2 | -7.0 | -10.5 |
| % Level 1 | | 39.2 | 31.7 | -7.4 | | 38.4 | 41.0 | 2.6 | |
| % Level 2 | | 19.1 | 23.1 | 3.9 | | 20.3 | 24.7 | 4.4 | |
| % Level 3 | | 18.3 | 22.6 | 4.3 | | 17.8 | 20.9 | 3.1 | |
| % Level 4 | | 23.4 | 22.6 | -0.8 | | 23.4 | 13.3 | -10.1 | |

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34771 | 413.3 | 417.6 | 4.3 | 32493 | 413.4 | 415.6 | 2.2 | |
| % Ready/Exceeding | | 59.3 | 50.0 | -9.3 | | 62.8 | 35.0 | -27.8 | -18.5 |
| % Level 1 | | 13.3 | 9.8 | -3.5 | | 13.6 | 17.2 | 3.6 | |
| % Level 2 | | 27.4 | 40.2 | 12.8 | | 23.5 | 47.7 | 24.2 | |
| % Level 3 | | 36.2 | 39.4 | 3.1 | | 39.0 | 30.4 | -8.6 | |
| % Level 4 | | 23.1 | 10.6 | -12.4 | | 23.9 | 4.7 | -19.2 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34769 | 415.2 | 419.7 | 4.5 | 32484 | 415.5 | 418.4 | 2.9 | |
| % Ready/Exceeding | | 38.8 | 41.4 | 2.6 | | 39.7 | 32.6 | -7.0 | -9.7 |
| % Level 1 | | 44.4 | 32.3 | -12.1 | | 40.9 | 38.7 | -2.3 | |
| % Level 2 | | 16.8 | 26.3 | 9.5 | | 19.4 | 28.7 | 9.3 | |
| % Level 3 | | 16.0 | 27.1 | 11.1 | | 16.9 | 22.8 | 5.9 | |
| % Level 4 | | 22.7 | 14.3 | -8.5 | | 22.7 | 9.8 | -12.9 | |

Grade 4 Students Progressing to Grade 6 in Two Years

The Difference in Percentage Point Change accounts how a typical Grade 4 to 6 cohort would progress by Grade 6. The loss in percentage of students meeting the Ready/Exceeding cut is compounded by the fact that in a typical year the percent of students meeting Ready/Exceeding levels would increase by 5.5 percentage points.

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34709 | 420.0 | 424.8 | 4.7 | 33471 | 420.4 | 423.4 | 2.9 | |
| % Ready/Exceeding | | 41.6 | 47.1 | 5.5 | | 45.3 | 38.4 | -6.9 | -12.4 |
| % Level 1 | | 37.7 | 30.5 | -7.2 | | 35.5 | 38.9 | 3.4 | |
| % Level 2 | | 20.7 | 22.4 | 1.7 | | 19.2 | 22.6 | 3.5 | |
| % Level 3 | | 19.7 | 22.5 | 2.8 | | 19.8 | 19.9 | 0.0 | |
| % Level 4 | | 21.9 | 24.6 | 2.7 | | 25.5 | 18.6 | -6.9 | |

Note that for the 2019 cohort students at the Ready/Exceeds levels lost ground.

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34801 | 416.2 | 420.2 | 4.0 | 33571 | 416.0 | 418.4 | 2.4 | |
| % Ready/Exceeding | | 55.8 | 54.7 | -1.2 | | 54.5 | 42.5 | -12.0 | -10.8 |
| % Level 1 | | 7.3 | 12.4 | 5.1 | | 10.9 | 18.0 | 7.2 | |
| % Level 2 | | 36.8 | 32.9 | -3.9 | | 34.7 | 39.5 | 4.8 | |
| % Level 3 | | 40.1 | 37.5 | -2.7 | | 39.3 | 32.6 | -6.7 | |
| % Level 4 | | 15.7 | 17.2 | 1.5 | | 15.2 | 9.9 | -5.3 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 34790 | 417.9 | 421.2 | 3.2 | 33554 | 417.8 | 419.7 | 1.8 | |
| % Ready/Exceeding | | 43.0 | 46.7 | 3.7 | | 42.7 | 39.4 | -3.3 | -7.0 |
| % Level 1 | | 32.5 | 32.1 | -0.4 | | 32.6 | 39.5 | 6.9 | |
| % Level 2 | | 24.5 | 21.3 | -3.3 | | 24.7 | 21.1 | -3.6 | |
| % Level 3 | | 25.5 | 27.9 | 2.4 | | 25.5 | 25.2 | -0.3 | |
| % Level 4 | | 17.5 | 18.8 | 1.3 | | 17.3 | 14.2 | -3.0 | |

Grade 5 Students Progressing to Grade 7 in Two Years

Students progressing from Grade 5 to Grade 7 typically increase the ELA percent Ready/Exceeding by 3.8 percentage points. Thus, the loss of -5.2 percentage points is more aptly represented in the Difference in Percentage Point Change column.

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32233 | 422.3 | 424.6 | 2.3 | 34286 | 422.5 | 423.4 | 0.9 | |
| % Ready/Exceeding | | 43.3 | 47.1 | 3.8 | | 45.2 | 40.0 | -5.2 | -9.0 |
| % Level 1 | | 33.2 | 32.4 | -0.8 | | 31.8 | 39.0 | 7.3 | |
| % Level 2 | | 23.5 | 20.5 | -3.0 | | 23.1 | 21.0 | -2.0 | |
| % Level 3 | | 21.2 | 21.8 | 0.7 | | 22.6 | 20.3 | -2.3 | |
| % Level 4 | | 22.2 | 25.3 | 3.1 | | 22.6 | 19.6 | -2.9 | |

In math and science students at the Ready and Close levels lost the most ground from 2019 to 2021.

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32327 | 418.3 | 421.8 | 3.6 | 34350 | 417.6 | 419.9 | 2.4 | |
| % Ready/Exceeding | | 53.1 | 48.7 | -4.3 | | 50.1 | 38.1 | -12.0 | -7.7 |
| % Level 1 | | 8.8 | 22.5 | 13.7 | | 9.8 | 31.7 | 21.9 | |
| % Level 2 | | 38.2 | 28.8 | -9.4 | | 40.1 | 30.2 | -9.9 | |
| % Level 3 | | 37.3 | 24.9 | -12.4 | | 39.5 | 21.2 | -18.3 | |
| % Level 4 | | 15.7 | 23.9 | 8.1 | | 10.6 | 16.9 | 6.3 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32322 | 419.8 | 422.8 | 3.0 | 34361 | 419.7 | 421.8 | 2.1 | |
| % Ready/Exceeding | | 42.1 | 43.7 | 1.6 | | 41.5 | 39.0 | -2.4 | -4.0 |
| % Level 1 | | 31.5 | 34.8 | 3.3 | | 32.3 | 39.4 | 7.2 | |
| % Level 2 | | 26.5 | 21.5 | -4.9 | | 26.2 | 21.5 | -4.7 | |
| % Level 3 | | 25.9 | 21.9 | -4.0 | | 27.1 | 20.9 | -6.2 | |
| % Level 4 | | 16.2 | 21.7 | 5.5 | | 14.4 | 18.1 | 3.8 | |

Grade 6 Students Progressing to Grade 8 in Two Years

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32213 | 424.6 | 426.2 | 1.6 | 34422 | 424.7 | 424.9 | 0.2 | |
| % Ready/Exceeding | | 46.3 | 51.0 | 4.7 | | 47.1 | 44.0 | -3.1 | -7.8 |
| % Level 1 | | 31.9 | 29.4 | -2.5 | | 30.7 | 35.5 | 4.8 | |
| % Level 2 | | 21.8 | 19.6 | -2.2 | | 22.3 | 20.5 | -1.7 | |
| % Level 3 | | 22.4 | 22.1 | -0.4 | | 22.6 | 21.5 | -1.1 | |
| % Level 4 | | 23.9 | 28.9 | 5.1 | | 24.5 | 22.5 | -2.0 | |

In the 2019 cohort of students progressing from Grades 6 to Grade 8, the math change appears significant, and it is. However, students typically lose ground (-13.7 percentage points). Science is similar. Notice that students typically do not keep up with grade level progression in a typical learning operations year.

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32290 | 421.9 | 424.8 | 2.8 | 34530 | 420.1 | 422.4 | 2.3 | |
| % Ready/Exceeding | | 63.0 | 49.1 | -13.9 | | 54.8 | 37.0 | -17.8 | -3.9 |
| % Level 1 | | 7.2 | 25.4 | 18.2 | | 12.6 | 36.2 | 23.6 | |
| % Level 2 | | 29.8 | 25.5 | -4.4 | | 32.6 | 26.8 | -5.8 | |
| % Level 3 | | 35.0 | 23.4 | -11.5 | | 37.5 | 20.3 | -17.2 | |
| % Level 4 | | 28.0 | 25.7 | -2.3 | | 17.3 | 16.8 | -0.5 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32299 | 421.9 | 424.6 | 2.7 | 34496 | 421.2 | 423.5 | 2.3 | |
| % Ready/Exceeding | | 49.8 | 43.8 | -6.1 | | 46.8 | 36.7 | -10.0 | -3.9 |
| % Level 1 | | 27.9 | 36.0 | 8.1 | | 32.0 | 41.6 | 9.5 | |
| % Level 2 | | 22.3 | 20.2 | -2.0 | | 21.2 | 21.7 | 0.5 | |
| % Level 3 | | 28.0 | 22.3 | -5.7 | | 27.8 | 18.6 | -9.3 | |
| % Level 4 | | 21.9 | 21.5 | -0.4 | | 18.9 | 18.2 | -0.8 | |

Grade 7 students Progressing to Grade 9 in Two Years

For the 2019 cohort of students progressing from Grades 7 to Grade 9, the math change appears significant, and it is. However, students typically lose ground (-12.3 percentage points). ELA and science are similar. Notice that students typically do not keep up with grade level progression in a typical learning operations year and that also appears to have been the case for the 2019 cohort, particularly for students at the highest achievement levels.

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 31980 | 424.4 | 426.1 | 1.7 | 31814 | 424.6 | 425.0 | 0.4 | |
| % Ready/Exceeding | | 45.9 | 45.0 | -1.0 | | 47.5 | 39.5 | -8.0 | -7.0 |
| % Level 1 | | 32.7 | 36.5 | 3.8 | | 32.1 | 41.7 | 9.7 | |
| % Level 2 | | 21.3 | 18.5 | -2.8 | | 20.5 | 18.8 | -1.7 | |
| % Level 3 | | 22.6 | 18.6 | -4.0 | | 21.9 | 18.4 | -3.6 | |
| % Level 4 | | 23.3 | 26.3 | 3.0 | | 25.5 | 21.1 | -4.4 | |

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32100 | 421.8 | 424.9 | 3.1 | 31943 | 421.9 | 422.7 | 0.8 | |
| % Ready/Exceeding | | 49.7 | 37.4 | -12.3 | | 49.2 | 27.8 | -21.3 | -9.0 |
| % Level 1 | | 19.6 | 39.8 | 20.2 | | 22.3 | 51.3 | 28.9 | |
| % Level 2 | | 30.7 | 22.8 | -7.9 | | 28.5 | 20.9 | -7.6 | |
| % Level 3 | | 28.0 | 20.7 | -7.3 | | 25.0 | 16.6 | -8.3 | |
| % Level 4 | | 21.7 | 16.7 | -5.0 | | 24.2 | 11.2 | -13.0 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 32096 | 422.8 | 426.2 | 3.4 | 31957 | 422.9 | 425.2 | 2.3 | |
| % Ready/Exceeding | | 45.8 | 36.5 | -9.3 | | 44.1 | 32.5 | -11.6 | -2.3 |
| % Level 1 | | 34.8 | 40.5 | 5.7 | | 34.4 | 46.2 | 11.8 | |
| % Level 2 | | 19.4 | 23.0 | 3.6 | | 21.5 | 21.3 | -0.2 | |
| % Level 3 | | 24.2 | 20.5 | -3.7 | | 22.0 | 19.4 | -2.6 | |
| % Level 4 | | 21.6 | 16.0 | -5.6 | | 22.1 | 13.1 | -9.0 | |

Grade 8 students Progressing to Grade 10 in Two Years

For the 2019 cohort of students progressing from Grades 8 to Grade 10, the math change appears significant, and it is. However, students typically lose ground (-12.3 percentage points). Notice that students typically do not keep up with grade level progression in a typical learning operations year and that also appears to have been the case for the 2019 cohort, particularly for students at the highest achievement levels.

| ELA | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 30939 | 425.8 | 427.4 | 1.6 | 30768 | 426.3 | 426.3 | 0.0 | |
| % Ready/Exceeding | | 48.3 | 43.3 | -5.0 | | 52.1 | 37.7 | -14.5 | -9.4 |
| % Level 1 | | 30.2 | 38.2 | 8.1 | | 28.5 | 44.4 | 15.9 | |
| % Level 2 | | 21.5 | 18.5 | -3.1 | | 19.4 | 18.0 | -1.4 | |
| % Level 3 | | 22.6 | 18.9 | -3.7 | | 22.2 | 18.0 | -4.2 | |
| % Level 4 | | 25.7 | 24.4 | -1.3 | | 29.9 | 19.7 | -10.2 | |

| Math | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 31072 | 424.2 | 426.6 | 2.3 | 30957 | 425.0 | 424.3 | -0.7 | |
| % Ready/Exceeding | | 45.9 | 30.2 | -15.7 | | 50.2 | 22.3 | -27.9 | -12.2 |
| % Level 1 | | 26.0 | 46.6 | 20.6 | | 24.7 | 56.8 | 32.1 | |
| % Level 2 | | 28.0 | 23.1 | -4.9 | | 25.1 | 20.8 | -4.3 | |
| % Level 3 | | 23.3 | 17.1 | -6.2 | | 23.7 | 15.2 | -8.5 | |
| % Level 4 | | 22.7 | 13.2 | -9.5 | | 26.6 | 7.2 | -19.4 | |

| Science | 2017 Cohort | | | | 2019 Cohort | | | | Difference in Percentage Point Change |
|---------------------|-------------|-------|-------|-------|-------------|-------|-------|-------|---------------------------------------|
| | Stat | N | 2017 | 2019 | Change | N | 2019 | 2021 | |
| Average Scale Score | 31063 | 424.7 | 427.4 | 2.7 | 30937 | 424.8 | 426.4 | 1.6 | |
| % Ready/Exceeding | | 44.3 | 34.1 | -10.2 | | 44.9 | 29.3 | -15.6 | -5.4 |
| % Level 1 | | 34.5 | 42.5 | 8.0 | | 34.9 | 48.2 | 13.3 | |
| % Level 2 | | 21.3 | 23.5 | 2.2 | | 20.2 | 22.4 | 2.2 | |
| % Level 3 | | 24.6 | 18.5 | -6.1 | | 22.8 | 16.5 | -6.3 | |
| % Level 4 | | 19.6 | 15.5 | -4.1 | | 22.2 | 12.9 | -9.3 | |