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SCHOOL PERFORMANCE IN MISSOURI:

WHERE RHETORIC MEETS REALITY

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EXECUTIVE SUMMARY

Transparency and accountability are indicators of good government. In Missouri, significant public funds are spent on the education of students in kindergarten through high school, and the expenditure raises the question of what Missourians are getting for their money. How well are our schools performing? Which schools are performing better than expected? Because of the opaque way that Missouri's Department of Elementary and Secondary Education (DESE) presents school performance data, it is difficult for Missourians to get the real story.

The purpose of this paper is to unpack actual school performance. Data from DESE and the U.S. Department of Education are used to demonstrate that there is significantly more variation in school performance than the DESE accountability system indicates and that the current school and district rating system used by DESE does not accurately reflect school performance. Further analysis finds that the percentage of low-income students enrolled in a school has a strong impact on school performance in Missouri, particularly in earlier grades. At the very least, it is important to track the performance of low-income students in each school to ensure that they are being well served. Finally, an analysis of Missouri charter schools finds that their performance exceeds that of the districts in the cities where they operate.

INTRODUCTION

There is evidence that academic achievement in Missouri is stagnant at best. Long-term measures, such as bachelor's degree attainment and median earnings, are barely improving and remain below the national averages (National Center for Education Statistics, 2017; Federal Reserve Bank of St. Louis, 2019). This harsh reality, however, has not seemed to affect rhetoric about school performance.

The average Missourian could easily believe that their schools were among the best in the nation, because Missouri uses an accountability system that gives high ratings to nearly every school district in the state. If those ratings were translated into report-card grades, 512 out of 518 school districts would have received A's in 2018 (86 received perfect A+'s), and the other six would have received B's.

Despite billions of dollars being spent on public education, stakeholders—including parents and policymakers—are largely left in the dark about how a given school or district is performing. The Missouri accountability system—the Missouri School Improvement Plan (MSIP)—produces Annual Performance Reports (APRs) for schools and districts that are difficult to understand, poorly matched to the work of schools, and overly generous in the ratings they award. A system that gives 98 percent of school districts the highest rating is of little use to parents trying to compare one district to another.

The purpose of this paper is to do the job DESE is supposed to do. District- and school-level data on Missouri school performance, in terms of rates of proficiency on state assessments, are used to rank order districts and thereby determine where the high- and low-performing schools and districts are across the state. While having students achieve proficiency in reading and math is but one of the objectives of a public education system, it remains an important one.[1]

Using statistical adjustments, test score data are recalibrated to account for the percentage of low-income students enrolled at each school and whether the school is in an urban area or not. Disadvantaged students can be more challenging for schools to teach, and urban schools tend to have more of them. These adjusted data are then used to assess how each school in the state performs relative to the performance of all other schools in the state. Rank ordering Missouri school districts and schools, both before and after adjusting for student and school characteristics, provides an opportunity to see how well low-income students are served by districts in the state and how the performance of urban districts and schools compares to non-urban.

Finally, the rank-ordered data are used to look at the change in adjusted performance over time for the only two school districts in the state with any competition from public charter schools: St. Louis and Kansas City. The hypothesis is that, even though these are low-performing districts, the need to compete with charter schools for students will lead them to improve their performance,

[1] For an analysis of Missouri growth data, see Burrola A, "Academic Progress and Missouri's Annual Performance Report," https://showmeinstitute.org/publication/accountability/academic-progress-and-missouris-annual-performance-report

and thereby improve their standing relative to the other districts in the state.

BACKGROUND

School accountability has come to carry so many positive and negative connotations that its origins are worth revisiting. In the middle of the last century, public education in the United States had become insular and uneven, serving students with resources and engaged parents fairly well, while serving other students dismally. In 1965 the federal government, under President Lyndon B. Johnson, made a bipartisan agreement to intervene in the distribution of resources to students in low-income schools.[2] Although the constitutionality of federal intervention into public education continues to be debated, the fact remains that Missouri has received and continues to receive federal education funding. In return, the state is obligated to hold schools accountable for educating students well, with a particular focus on low-income students.

The original Elementary and Secondary Education Act (ESEA)—which has undergone several name changes, including No Child Left Behind (NCLB) and the current Every Student Succeeds Act (ESSA)—was intended to provide additional funds to schools serving disadvantaged students as a way to equalize opportunity. From the start, the funds came with reporting requirements for school performance. During the debate on the bill, Senator Robert F. Kennedy said, "I think it is very difficult for a person who lives in a community to know whether, in fact, his educational system is what it should be, whether if you compare his community to a neighboring community they are doing everything they should be, whether the people that are operating the educational system in a state or local community are as good as they should be. . . . I wonder if we couldn't have some system of reporting . . . through some testing system that would be established [by] which the people at the local community would know periodically . . . what progress had been made" (McLaughlin, 1974).

In addition, Section 402 of the Civil Rights Act of 1964 required that the Commissioner of Education conduct a survey and report to the president and Congress "concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion, or national origin in public educational institutions." (Dickinson, 2016). Thus was born what came to be known as the Coleman Report. The Coleman Report, led by sociologist James Coleman, was a massive effort by a team of social scientists to unravel the mystery of public education—resources, effectiveness, and outcomes. Among other things, the Coleman Report was one of the first to document and discuss the notion of achievement gaps between groups of students.

Another federal effort to assess and monitor the educational progress of U.S. students was implemented around the same time—the National Assessment of Educational Progress (NAEP)(National Center for Education Statistics, n.d.). NAEP, which eventually came to be known as "The Nation's Report Card," was voluntary when it was rolled out in the late 1960s. However, by 1972 Long-Term-Trend (LTT) NAEP was assessing a nationally representative sample of 9-, 13-, and 17-year-olds every two years.

Fast forward to the Reagan years and concerns around school performance and student outcomes had intensified. The president convened the National Commission on Excellence in Education, which in 1983 issued its famous report titled *A Nation at Risk*. (U.S. Department of Education, 1983). In this report we were warned of a "rising tide of mediocrity" in our public education system that would be considered an act of war if it were forced on us by another nation.

Our schools were not okay. We were losing ground internationally, yet parents had little information beyond their own children's report cards. Not surprisingly, the standards and accountability movement began to emerge.

In 1989, President George H.W. Bush convened a group of governors in Charlottesville, Virginia, for an education summit. (National Education Goals Panel, 1999). The summit resulted in a list of education goals for states to achieve by the year 2000, and it put forth the notion that districts, and even states, would not press forward on these goals without national leadership. Some states,

[2] It is very difficult to determine if the 1965 Elementary and Secondary Education Act was originally intended to serve low-income students or the schools that serve them. The definition of low-income used for the grant formula calculations under Title I of this act is the federal poverty line.

including Missouri, had already been developing their own accountability programs.[3] But this trend intensified during the 1990s.

Simultaneously, a second NAEP assessment was added. The "main" NAEP differed from the LTT NAEP in that it allowed for statewide representative samples and tested students at 4th grade, 8th grade, and (occasionally) 12th grade. This is the only assessment that allows for comparison of educational progress between states and, importantly, over time.[4] In addition, the main NAEP breaks down scores by student subgroup, which allows for the tracking of achievement gaps between students of different races and ethnicities, as well as between low-income and non-low-income students.

In 2002, the federal government doubled down on its involvement in forcing states to set standards and be accountable for the performance of all students and students by subgroup. Prior to No Child Left Behind (NCLB), states could hide the performance of student subgroups, but no longer. NCLB also ushered in the era of school report cards, in which schools were given labels such as "accredited" or perhaps even a letter grade. Theoretically, parents should have had all the information they needed to hold their schools accountable, which would be particularly meaningful if parents got to choose their children's schools.

The road to improving public education in the United States was paved with good intentions, but as is often the case, the results took a different turn. "Teaching to the test" took away from curriculum. Students were tested multiple times each year, and parents didn't like it. And a strong resistance emerged to the attempt to encourage states to adopt uniform standards (the "Common Core") so that a child in Mississippi learned about the same things as a child in Massachusetts (Jackson, 2015).

The most recent iteration of federal education law—the Every Student Succeeds Act (ESSA), which was passed in December 2015—has dialed back the federal role, and the Common Core is largely gone. It is now up to states to develop their own systems of standards and accountability. States also set their own targets for proficiency and growth. One aspect that has remained, however, is the obligation to report school performance to parents. States are required to create parent-friendly report cards that contain at least five indicators required by ESSA: proficiency, growth, graduation rates, college/career readiness, and a fifth indicator of the state's choice. Missouri chose attendance for the fifth indicator, while other states have chosen more ambitious measures, such as school climate or student and parent satisfaction. Regardless, the reporting on each of the five indicators must include data for all students and for students by subgroup.

STANDARDS AND ACCOUNTABILITY IN MISSOURI

In Missouri, the state accountability system is known as the Missouri School Improvement Plan (MSIP). The first two cycles of MSIP involved "comprehensive, multifaceted onsite team reviews for all public school districts" (Missouri Department of Elementary and Secondary Education, n.d. [a]). MSIP 3, launched in 2001 as NCLB was about to become law, began evaluating districts using the Missouri Assessment Program (MAP) across grade levels and content areas. For the first time, districts received Annual Performance Reports (APRs) that tracked their performance to the MSIP standards. MSIP 4 was in place from the 2006–07 school year through 2011–12 (Missouri Department of Elementary and Secondary Education, n.d. [b]). This version dropped the onsite reviews in satisfactory districts. It was already the case that most districts were fully accredited, so the MSIP 4 focused DESE's efforts on those few that had declining performance over multiple years and were in danger of losing their accreditation.

Since 2012–13, Missouri has been using the MSIP 5

[3] In October 1987, the Missouri State Board of Education appointed a statewide task force composed of stakeholders from across the state to advise Department staff during the launch of the new classification process, the Missouri School Improvement Plan (MSIP). The MSIP Standards and Indicators incorporated three areas: Resource (program of studies, class size, professional staff ratios, teacher certification and plan time), Process (curriculum, instruction/assessment, differentiated instruction, instructional climate, libraries, guidance and counseling, supplemental programs, governance and administration, facilities, safety and support services), and Performance. For the first time in Missouri's history, student performance would play a role in the accreditation of a public school district. Every public school in Missouri was to undergo an onsite MSIP review at least once every five years.

[4] If a state changes the test used in their accountability system, then year-to-year comparisons become problematic. However, NAEP uses a consistent framework, with some exceptions that are noted and can be accounted for, which means that it allows for comparison of scores over time.

system, which issues APRs to schools and districts based on five metrics: academic achievement for all students (including measures of progress and growth), academic achievement for disadvantaged students (lumped into a "super subgroup"), attendance, high school or college/career readiness, and high school graduation rates. In each of these five areas, schools and districts can earn points for hitting a target, with extra credit points for making progress towards the target. Districts must earn 70 percent of the possible non-extra-credit points (the denominator) in order to be fully accredited, but they get to include their extra credit points in the numerator. While APR scores are calculated for both districts and schools, only districts receive an accreditation rating.

HOW ARE MISSOURI'S PUBLIC SCHOOLS PERFORMING?

Understanding Missouri school performance requires looking at data across three levels of analysis: the state level, the district level, and the school level. This analysis focuses on rates of proficiency in reading and math, primarily at the 4th and 8th grade. These grades were selected because they are the same grades assessed by NAEP.

State-level Performance in Math and Reading

For a first cut through the data, let's take the widest approach and look at Missouri's performance as a whole. Missouri's DESE gives high marks to public education in the state. Their "Show Me Success" program claims a mission to "guarantee the superior preparation and performance of every child in school and in life" (Missouri Department of Elementary and Secondary Education, n.d. [c]). However, a "Public Education Snapshot" published on DESE's website has no information on rates of proficiency in English/language arts or math (Missouri Department of Elementary and Secondary Education, n.d. [d]). The Snapshot celebrates high attendance and graduation rates and the fact that 49 percent of graduates were college- or career-ready. The Snapshot also includes data on student demographics, the number of bus miles driven, and lunches served. Academic outcomes and data on achievement gaps are conspicuous by their absence.

So let's find them. Missouri has been administering the Missouri Assessment Program (MAP) in grades 3 through 8 since 2001. However, the state has changed the content standards and assessment format almost continuously, making it difficult to compare scores over time. As of the 2017–18 school year, Missouri had changed the test four times in the prior five years, including a switch to the Common Core Smarter Balanced test in 2015 and a switch away from it in 2016.

Although performance has been basically flat in English/language arts for the past decade, the MAP scores suggest that students did worse in 2014 and then better for a few years, followed by a decline in 2018. Similarly, mathematics performance has been essentially flat for 4th-graders, with a fairly steady decline for 8th-graders, yearly fluctuations notwithstanding (Figure 1).

This performance is borne out in Missouri's NAEP scores. In reading (equivalent to English/language arts on MAP), performance has been essentially flat since 2009. In mathematics, 4th-grade scores have been flat, while 8th-grade scores have been in decline.

It should be noted that Missouri's NAEP scores are about 12 to 15 percentage points lower in Reading than the MAP scores. In 2017, some 37 percent of 4th-graders scored Proficient or above on NAEP, compared to 50 percent on MAP. Similarly, 35 percent of 8th-graders scored Proficient or above on NAEP, while 49 percent did so on MAP. In Mathematics, scores were slightly higher on MAP for 4th-graders (46 percent on MAP vs. 40 percent on NAEP) and similar for 8th-graders (approximately 30 percent Proficient or above).[5]

The bottom line is that, despite the fact that nearly every school district in the state is rated as Fully Accredited by DESE, somewhere between 30 and 50 percent of Missouri students are able to read and do math at grade level, and that has been true consistently since at least 2009.

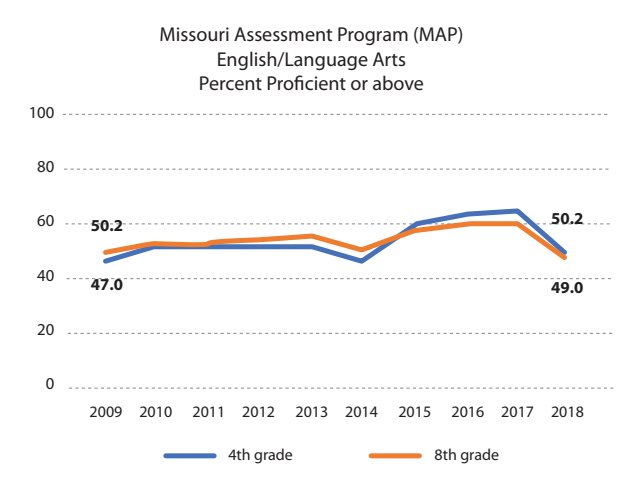
Averages, however, can hide variations within large populations. One outcome of the standards and accountability movement is that schools and districts must

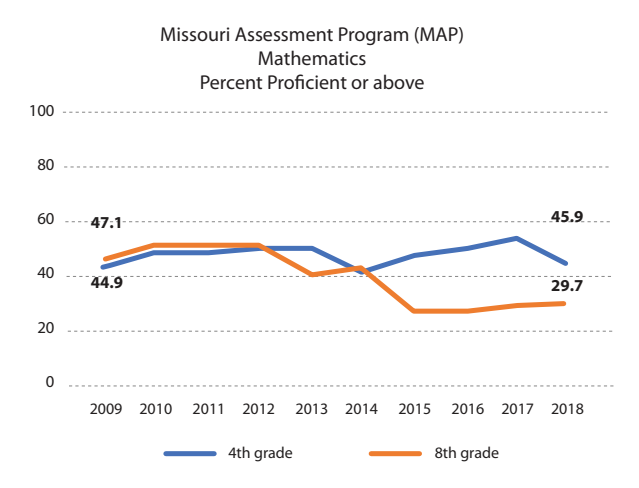
[5] According to the National Center for Education Statistics (NCES), Proficient on NAEP means that a student shows "solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-word situations, and analytical skills appropriate to the subject matter." (https://nces.ed.gov/nationsreportcard/glossary.aspx#p)

Figure 1

Missouri MAP performance in 4th- and 8th-grade english/language arts and math: 2009–2018

The performance of Missouri 4th-graders in ELA and math has been essentially flat for the past decade, while the performance of 8th-graders has been flat in ELA and declining in math.





Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009, 2011, 2013, 2015, and 2017 Reading and Mathematics Assessments. Retrieved August 12, 2019 from the Main NAEP Data Explorer (https://nces.ed.gov/nationsreportcard/naepdata/).

report performance data by subgroup.[6] This disaggregation is intended to prevent the hiding of student performance for those groups of students who may be more challenging to teach. Further, it is a measure of how schools and districts meet that challenge.

The MSIP 5 system reports only on a "super subgroup," which combines Black students, Hispanic students, low-income students, students with disabilities, and English language learners. As a result, the MSIP results do not indicate which, if any, of these groups of students are performing well or poorly, only how the group does as a whole. DESE does release supporting data that allow for a comparison between low-income and non-low-income groups based on free or reduced-price lunch eligibility.[7] Fortunately, NAEP can also be used to compare academic performance between low-income students and non-low-income students for Missouri.

Basically, there is a 30-point gap in the percent scoring Proficient or above between low-income students in Missouri and non-low-income students in 4th-grade mathematics and a 26-percentage-point gap for 8th-grade students. Each of these gaps has remained consistent since at least 2009. Not only is a very low percentage of low-income students in Missouri proficient in mathematics, the state has made no progress in closing the achievement gap over the last decade. Results are similar for reading.

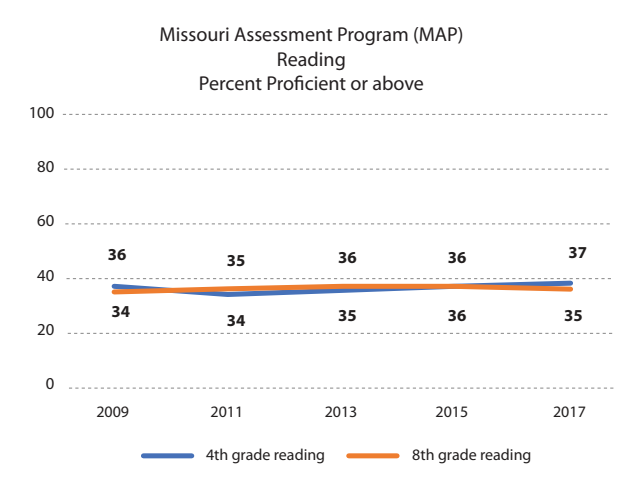
[6] A subgroup is a group of students, such as students by race/ethnicity, low-income students (as measured by eligibility for free or reduced-price lunch), students with disabilities and students who are English language learners.

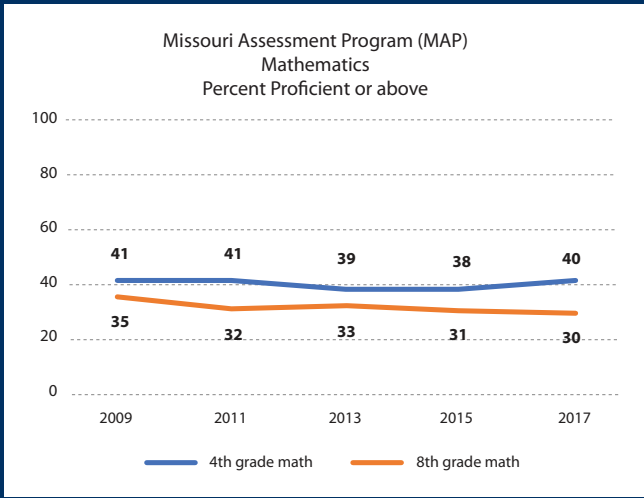
[7] In 2016–17, approximately 48 percent of Missouri public school students qualified for free or reduced-price lunch. District percentages ranged from a low of 11 percent to 100 percent. Districts with 100 percent eligibility are likely using the Community Eligibility Provision (CEP) that allows low-income schools and districts (those with at least 40 percent low-income enrollment) to offer school lunch to all students without collecting household income data.

Figure 2

Missouri NAEP performance in 4th- and 8th-grade reading and math: 2009–2017

Missouri's NAEP performance since 2009 mirrors MAP performance, but at lower levels of proficiency.





Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009, 2011, 2013, 2015, and 2017 Reading and Mathematics Assessments. Retrieved August 12, 2019 from the Main NAEP Data Explorer (https://nces.ed.gov/nationsreportcard/naepdata/).

The MSIP system and the standards changed; so did the scores needed to be qualify as Proficient, and so did test format of the MAP. Nonetheless, Missouri's academic performance—in terms of proficiency in English/language arts and mathematics—has been flat, and no progress has been made in reducing the achievement gaps between low-income and non-low-income students. Perhaps it's not surprising that DESE doesn't celebrate the fact that fewer than half of Missouri students are proficient in either reading or math when they start high school.

District-level Performance

State accountability systems can shed some light on the overall performance of the public education system, but, equally importantly, they should reveal which districts in the state are strongest and which are weakest. This is the fundamental purpose of an accountability system.

In 2017–18, there were 518 public school districts and 71 public charter schools in the state.[8] According to the MSIP ratings, 512 of the 518 districts were fully accredited in that year and the other six were provisionally accredited (public charter schools do not receive an accreditation status). This is a problem.

Even though MSIP does not indicate which districts are performing well and which are not, rates of proficiency in English/language arts (ELA) and mathematics varied substantially across the state. Table 1A (see Appendix 1) contains the 25 highest scoring districts (based on the percentage of students who scored Proficient or Advanced) in each subject.[9] At the opposite end (Table 1B) are the 25 districts with the lowest rates of proficiency. These rates vary between 15 and 29 percent proficiency in ELA and 0

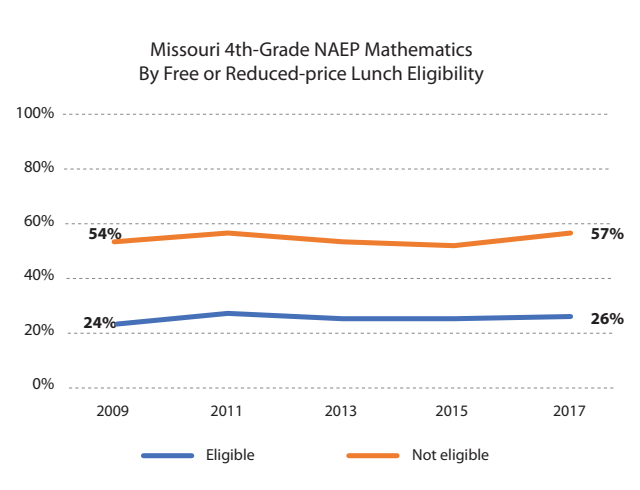
[8] In Missouri, charter schools that are not sponsored by local school district boards are their own Local Education Agency (LEA), which is essentially the same as a school district. As on 2018, there were no charter schools in the state that were sponsored by local school districts, therefore all of them are LEAs.

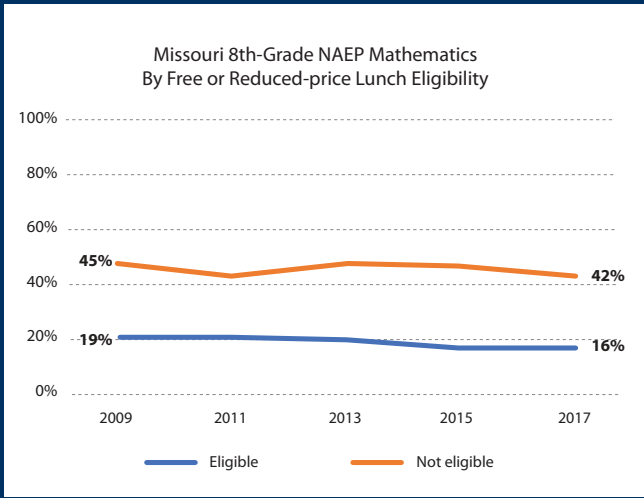
[9] Alternative schools and special education schools are excluded from this analysis. Charter schools are considered separately.

Figure 3

Missouri NAEP performance in 4th- and 8th-grade english/language arts and math by FRPL eligibility: 2009–2018

Missouri has made little to no progress in closing the achievement gaps between low-income and non-low-income students in the past decade.





Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009, 2011, 2013, 2015, and 2017 Mathematics Assessments. Retrieved August 12, 2019 from the Main NAEP Data Explorer (https://nces.ed.gov/nationsreportcard/naepdata/).

and 19 percent in mathematics. While the six provisionally accredited districts (Calhoun R-VIII, Hayti R-II, Hickman Mills C-1, Kansas City 33, Normandy Schools Collaborative, and Riverview Gardens) are on this list, there are also 19 others on the list that are fully accredited.

Many of the lowest-scoring districts serve high percentages of low-income students. In fact, many use the Community Eligibility Provision (CEP) to qualify 100 percent of their students for the USDA's free or reduced-price lunch program (FRPL). Conversely, many of the highest-performing districts serve low percentages of students who qualify for the FRPL. Unfortunately, there is little or no information in the APR point system that identifies the size of achievement gaps within districts.

Table 2 (see Appendix 1) contains the 25 districts with the highest gap between the percentage of non-FRPL students scoring Proficient and above and FRPL students scoring Proficient or above in mathematics in 2018.[10] The average percentage of low-income students in these districts is 42 percent, and the average spending per student is nearly $13,000. On average, 32 percent of low-income students scored Proficient or above in mathematics in 2018 in these districts, compared to 71 percent of non-low-income students. Many of the large suburban St. Louis districts report achievement gaps of 35 percent or more. For example, Ladue, with an enrollment of over 4,000 students, 11 percent of whom qualify for free or reduced-price lunch, had an average achievement gap across grades and subjects of nearly 45 percent.

Should school districts that demonstrate such low levels of performance receive high (or even perfect) scores from the state accountability system? Should school districts that have such yawning gaps between low-income students and

[10] Because of the way the data are reported by DESE, these numbers represent the average of the percent Proficient or above across all grade and subject combinations in the district.

non-low-income students be given the all-clear? That is currently what the system does.

How Does the Enrollment of Low-Income Students Affect School Performance?

In order to help clarify which Missouri school districts have demographic advantages that hide the performance of disadvantaged students, the proficiency data were adjusted for both the percentage of low-income students served in each school and whether the school is in an urban area or not.

Methodology The proficiency data were adjusted using state assessment data as submitted to the federal EdFacts data collection. (U.S. Department of Education, 2019). This dataset contains the number of test-takers and the percentage of students scoring Proficient or above by grade/subject/subgroup for all schools in the United States. State education agencies (SEAs) submit these data each year to the U.S. Department of Education. The data are suppressed for any grade/subject/subgroup with fewer than 30 test takers. For groups of students that have between 30 and 200 test takers, ranges were reported for the percentages of students scoring Proficient or above. This analysis uses the midpoint of those ranges.

Using EdFacts data for the 2014–15 through 2016–17 school years, the following school-level models for 4th- and 8th-grade reading and mathematics were estimated:

$$P_{isgy} = \alpha + \beta_1 FL_{iy} + \beta_2 U_{iy}$$

where P_{isgy} is the grade level percent proficient and above for each school *i,* for subject *s*, in grade *g*, for year *y*. FL_{iy} is the percent of test takers at each school *i* who qualify for free lunch (a stricter standard than reduced-price lunch) in each year *y*, used as a proxy for low-income; and U_{iy} is a dummy variable indicating if school *i* was located in an urban area in year *y*. The free lunch data are from the Common Core of Data (CCD), also collected by the U.S. Department of Education from SEAs.[11] Models were estimated for each year, subject, and grade for all schools in the state with test scores in each combination, including charter schools.[12]

The results (Table 3 in Appendix 1)) indicate, based on the R^2, that at the 4th-grade level in Missouri in 2016–17, nearly 58 percent of a school's percentage of students scoring Proficient or above in reading could be predicted by just these two variables: the percentage of low-income students and whether the school is in an urban area. For math, the percentage was close to 50 percent. This indicates that student background has a very strong influence on the standardized test scores of 4th-graders in Missouri. At the 8th-grade level, when the influence of the home gives way to other influences, the numbers were lower. These two variables explained 42 percent of reading scores and just 21 percent of math scores.

In most cases (4th- and 8th-grade reading and math), being an urban school dropped the expected percentage of students scoring Proficient or above by 3.5 to 5.5 percentage points, although in 8th grade the relationship was not significant in 2014–15 for either reading or math and in 2015–16 math the coefficient was positive. This means that, for the most part, our urban schools perform worse than our non-urban schools.

Each additional percentage point increase in the number of students qualifying for free lunch caused the Proficient or above percentages to drop by 0.3 to 0.5 percent. In other words, a school with 50 percent of their students qualifying for free lunch would be expected to have a rate of proficiency that was 5 percentage points lower than that of a school with 40 percent of their students qualifying.

The coefficients from each model were then used to calculate a predicted score for each school. This predicted score is the expected percentage of students scoring Proficient and above for each school, based on the percentage of test-takers who qualify for free lunch and whether the school is located in an urban area. The difference (residual) between the expected and actual percent proficient or above from these predictions was then used to rank order all schools in each state. The rank ordering was then used to assign an adjusted percentile rank from 1 to 100, with 100 being the percentile rank for the school in the state that most exceeded expectations

[11] School-level FRPL percentages were used instead of the percentage of test-takers who qualify for FRPL as this analysis seeks to control for school-level environmental factors.

[12] The analysis excludes schools identified as alternative, vocational ed, or special education.

and 1 for the school that performed furthest below expectations.

To account for noise and randomly distributed errors in the data, 3-year rolling averages were computed for each school. In addition, the school scores were aggregated up to the district level, yielding an "average of three-year averages." To be in the top 10 percent of districts in the state, a district would need an average score for all of its schools of between 90 and 100 percent. To be in the bottom 10 percent would require an average score across all schools to be between 0 and 10 percent.

District-level Impact Table 4 in Appendix 1 contains the districts in the top 10 percent and the bottom 10 percent of all districts with 4th-grade test scores for 2016–17 after controlling for the percentage of low-income students and whether a school is urban. Scoring a 90 percent or higher means that the average adjusted percentile rank of all schools in the district on either 4th-grade reading or 4th-grade math was in the top 10 percent. The opposite is true for the bottom 10 percent. Districts that qualified for either group are listed in alphabetical order. For comparison, the actual percentage of students who scored Proficient or above is included. The table contains averages of averages, which is to say the three-year averages for each school were averaged for each district.

As an example, the average percentage of 4th-graders scoring Proficient or above in 4th-grade Reading/language arts in Salem R-80 was just 59 percent. Salem R-80 only has one school (Salem Upper Middle) with 4th-grade scores in 2014–15, 2015–16, and 2016–17. Ninety-nine percent of the students at this school qualify for free or reduced-price lunch. Therefore, it was expected that 35 percent of the students would have scored Proficient or above in ELA in 2014–15 (compared to an actual score of 57 percent). For 2015–16 the predicted score was 41 percent (compared to an actual score of 52 percent), and in 2016–17 the predicted score was 43 percent (compared to an actual score of 47 percent). Salem R-80 is in the top 10 percent of districts in the state because they exceeded their expected scores by as much as 22 percentage points over this time frame. At the bottom of the table, in Princeton R-V, an average of 55 percent of 4th-graders scored Proficient or above in 2016–17 (the only year for which data were available). However, because just 38 percent of students qualify for free lunch in Princeton, their expected score was near 70 percent. Because they missed their expected score by 15 percentage points, they have a relatively low rank compared to other schools in the state.

Table 5 in Appendix 1 shows the results for 8th grade. Again, districts, such as Clarkton C-4, with seemingly low percentages of students scoring Proficient or above have sufficiently exceeded expectations, putting them in the top 10 percent. The differences between the absolute rankings and the adjusted rankings indicate that it is important to consider low-income students when assessing district performance in Missouri.

School-level Impact Although DESE does not include the performance of low-income students specifically in the APR calculation (they're only part of the super subgroup), the results of the models that adjusted for low-income enrollment reflect how well schools are serving that group. The maps in Appendix 2 use dots to represent each school with useable data for each grade. Very small schools (with fewer than 30 test-takers) are not included. For the maps with adjusted percentile data, the darkest blue dots most exceeded their expected performance, while the darkest red dots most missed it.

If a school has a blue dot on the map of absolute (unadjusted) performance, but a red dot on the map of adjusted performance, then their strong absolute performance did not meet their expected performance after the adjustment. If the performance of low-income students did not have a substantial impact on absolute performance, then blue dots would stay blue and red dots would stay red.

At the 4th-grade level, there is substantial color change between the absolute performance and the adjusted performance of schools. This confirms the earlier results of the regression analysis: that low-income students impact school performance in a substantial way. For example, several schools in the bootheel that have low levels of proficiency fare better once the demographic control is included. In addition, there is more of a difference in reading than in math, which aligns with the popular perception that reading is more influenced by the home than math.

The results are less pronounced at the 8th-grade level, again confirming the regression results. In other words, the impact of student demographics wanes as students progress through school and the home has less influence.

How Do Charter Schools Compare to Their Public School Districts?

Although there are very few unaccredited districts in Missouri, in 1999 two districts—Kansas City and the City of St. Louis—had such low academic performance that charter schools were introduced as an intervention. The charter school law in Missouri allows charter schools to open under the sponsorship of institutions of higher education, but only in officially unaccredited districts. Charter schools can technically open in other districts, but only with the local school board as the sponsor—a condition that has effectively barred charter schools from opening outside of Kansas City or St. Louis.

Although charter schools were included in the adjusted proficiency models, much of the analysis here has been on traditional public schools. Therefore, two questions regarding charter schools in these two districts will be addressed here: (1) do the charter schools outperform the traditional public schools in these two districts? and (2) has the performance of Kansas City and St. Louis traditional public schools improved due to competition from charter schools? Both of these questions will be answered using adjusted performance data that control for the percentage of low-income students in a school and whether or not the school is in an urban area. Technically, all of the schools in these two districts, both charter public schools and traditional public schools, are urban. But it is still important to use the adjusted data when examining the performance of these schools relative to the rest of the schools in the state.

Table 6 in Appendix 1 has data for 2014–15, 2015–16, and 2016–17 for 4th- and 8th-grade reading/language arts and mathematics. The table has data on the absolute percentile rankings, meaning the position of the district and the charter schools relative to all other schools in the state based on actual rates of proficiency. The table also has data on the adjusted percentile rankings, or the position of the districts and charter schools compared to the rest of the schools in the state after adjusting for demographics and urbanicity.

Looking at the average of the absolute percentiles, Kansas City public schools are in the bottom 20 percent of schools in the state in both subjects for 4th grade. The rankings are much lower at the 8th grade, generally in the bottom 5 percent of schools.[13] After adjusting the scores, however, Kansas City public schools jump to between the 40th and 50th percentiles in 4th grade. The 8th-grade adjusted scores are higher than the absolute scores, but still quite low.

By comparison, the charter schools in Kansas City had higher relative positions, compared to the rest of the schools in the state, across all grades and subjects other than 2016–17 4th-grade ELA. In 8th-grade ELA, the charter schools are in a much higher position, on average, relative to the rest of the schools in the state than the Kansas City public schools are. In fact, the Kansas City charter schools are well above the state average in 8th grade, other than in mathematics in 2016–17 when they were in the 46th percentile.

Turning to the St. Louis Public Schools reveals much the same story. The adjusted performance of St. Louis charter schools exceeds that of the traditional public schools across all grades, subjects, and years, other than 8th-grade mathematics in 2016–17. In many cases, the St. Louis charters are, on average, in the top half of all schools in the state once demographics and urbanicity are considered.

So, do charter schools outperform their district schools? The answer is yes. Have charter schools improved the performance of the districts in which they operate? We aren't able to tell with the data analyzed here, but it's worth monitoring.

CONCLUSION

There is a reason for accountability in public education and it goes well beyond the federal law that mandates it. Over $12 billion dollars in local and state tax revenue are spent on public education in Missouri each year. Stakeholders, including policymakers and taxpayers, deserve to know what types of outcomes are being

[13] The Kansas City public schools data do not include magnet schools as they have selective admission. Charter schools are not allowed to have selective admission, making only the non-magnet schools comparable.

produced by the system in which they are investing such large sums of money. Equally important, parents and students need easily understood information about school performance, both to decide where to attend or, if that's a foregone decision, to hold their assigned school accountable.

Transparency—in spending and in results—makes accountability possible. The Missouri Department of Elementary and Secondary Education has an obligation to be transparent with all stakeholders and to provide useful, relevant, timely, and accurate information. In fact, providing information and data is one of the primary functions of a state education agency.

In this study we have found that the APR indicator scoring system does not accurately reflect performance. The lack of variation, as well as the difficulty in interpreting, the school and district level APR points released by DESE necessitates independent analysis of the supporting data. This analysis, combined with external sources of information, shines further light onto which of Missouri's 518 public school districts and 2,200 public schools are doing better than the others. The conversion from absolute performance to adjusted performance indicates that poverty has a substantial impact on academic achievement in Missouri and should considered an important factor in the accountability system.

Ideally, independent efforts to understand Missouri school performance will prompt DESE to improve their measurements and to improve what is provided to parents, policymakers, and other stakeholders.

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APPENDIX 1

Table 1A: **Top 25 districts according to percent proficient or above on 2018 MAP ELA and mathematics assessments**

English/Language Arts				Mathematics			
Top 25 districts	Number of reportable test-takers	Number scoring Proficient or above	Percent scoring Proficient or above	Top 25 districts	Number of reportable test-takers	Number scoring Proficient or above	Percent scoring Proficient or above
Richland R-I	500	420	84%	Richland R-I	500	438	88%
Laredo R-VII	48	40	83%	Davis R-XII	48	38	79%
Davis R-XII	48	40	83%	Spring Bluff R-XV	279	219	78%
Spring Bluff R-XV	279	229	82%	Laredo R-VII	48	36	75%
Spickard R-II	30	24	80%	Pleasant View R-VI	129	94	73%
Pleasant View R-VI	125	85	68%	Green Forest R-II	502	354	71%
Kirkwood R-VII	8,026	5,452	68%	Spickard R-II	30	21	70%
Atlanta C-3	327	222	68%	Hickory Co. R-I	1,151	791	69%
Clayton	3,710	2,484	67%	Atlanta C-3	354	238	67%
Strain-Japan R-XVI	123	82	67%	Clayton	3,845	2,585	67%
Avenue City R-IX	247	164	66%	St. Elizabeth R-IV	314	205	65%
St. Elizabeth R-IV	330	218	66%	Marceline R-V	888	569	64%
Hickory Co. R-I	1,145	754	66%	Fairfax R-III	202	129	64%
Dadeville R-II	205	134	65%	Ladue	5,842	3,675	63%
Rock Port R-II	467	305	65%	Rock Port R-II	480	298	62%
Bernie R-XIII	974	636	65%	Howell Valley R-I	359	222	62%
Lindbergh Schools	9,901	6,450	65%	North Shelby	396	241	61%
Ladue	5,900	3,834	65%	Brentwood	1,207	733	61%
Hale R-I	222	142	64%	Oran R-III	449	269	60%
Weaubleau R-III	564	359	64%	South Nodaway Co. R-IV	264	157	59%
Festus R-VI	4,582	2,890	63%	Blue Springs R-IV	22,025	13,085	59%
Blair Oaks R-II	1,546	973	63%	Kirkwood R-VII	7,987	4,735	59%
Francis Howell R-III	23,472	14,586	62%	Thornfield R-I	227	134	59%
Leeton R-X	425	262	62%	Lindbergh Schools	9,375	5,532	59%
Crystal City 47	800	491	61%	Hale R-I	230	135	59%

Sources: Missouri Department of Elementary and Secondary Education (DESE), Missouri Comprehensive Data System, Reports and Resources, Students, Missouri Assessment Program (MAP) data, School—content area all and disag 2018. Accessed on May 14, 2019 (https://apps.dese.mo.gov/MCDS/home.aspx).

Table 1B: **Bottom 25 districts according to percent proficient or above on 2018 MAP ELA and mathematics assessments**

English/Language Arts				Mathematics			
Bottom 25 districts	Number of reportable test-takers	Number scoring proficient or above	Percent scoring proficient or above	Bottom 25 districts	Number of reportable test-takers	Number scoring proficient or above	Percent scoring proficient or above
Orearville R-IV	128	19	15%	Malta Bend R-V	143	—	0%
Roscoe C-1	130	21	16%	Bronaugh R-VII	287	20	7%
Riverview Gardens	10,826	1,879	17%	Breckenridge R-I	108	8	7%
Normandy Schools Collaborative	6,310	1,225	19%	Leesville R-IX	285	28	10%
St. Louis City	42,474	9,428	22%	Clarkton C-4	655	70	11%
Leesville R-IX	285	65	23%	Orearville R-IV	128	14	11%
Hickman Mills C-1	11,462	2,650	23%	Riverview Gardens	10,509	1,266	12%
Kansas City 33	30,354	7,198	24%	Normandy Schools Collaborative	6,492	796	12%
Charleston R-I	1,869	477	26%	Charleston R-I	1,859	228	12%
Newtown-Harris R-III	193	50	26%	Glasgow	457	60	13%
Lexington R-V	1,767	486	28%	Hickman Mills C-1	11,377	1,700	15%
Jennings	5,293	1,458	28%	Hayti R-II	1,104	171	15%
Oregon-Howell R-III	384	106	28%	Craig R-III	103	16	16%
Milan C-2	1,202	332	28%	Slater	684	107	16%
Laquey R-V	1,166	324	28%	Cowgill R-VI	89	14	16%
Clarkton C-4	599	167	28%	Paris R-II	634	100	16%
Diamond R-IV	1,357	379	28%	Ferguson-Florissant R-II	21,338	3,563	17%
Nodaway-Holt R-VII	357	100	28%	Roscoe C-1	130	22	17%
New Madrid Co. R-I	2,430	684	28%	Livingston Co. R-III	126	22	17%
Kingsville R-I	371	105	28%	New Madrid Co. R-I	2,529	451	18%
Marshall	4,254	1,205	28%	St. Louis City	41,900	7,538	18%
Wheaton R-III	712	202	28%	Kingsville R-I	380	69	18%
Bronaugh R-VII	281	80	28%	Pemiscot Co. R-III	235	45	19%
Clearwater R-I	1,698	486	29%	Raytown C-2	16,222	3,139	19%
Ferguson-Florissant R-II	21,140	6,076	29%	Chilhowee R-IV	289	56	19%

Sources: Missouri Department of Elementary and Secondary Education (DESE), Missouri Comprehensive Data System, Reports and Resources, Students, Missouri Assessment Program (MAP) data, School—content area all and disag 2018. Accessed on May 14, 2019 (https://apps.dese.mo.gov/MCDS/home.aspx).

Table 2: **Districts with the largest gap between FRPL and non-FRPL students in MAP mathematics: 2017–18**

District	Total enrollment 2016–17	Total FRPL enrollment 2016–17	FRPL percentage 2016–17	Total expenditures per student 2014–15	FRPL students, Avg of percent proficient or above	Non-FRPL students, Avg of percent proficient or above	Gap between FRPL and non-FRPL students
Meadville R-IV	231	81	35%	$10,156	27.3%	81.6%	54.3%
Norwood R-I	348	226	65%	$9,783	24.9%	73.3%	48.3%
Ladue	4,063	435	11%	$15,013	31.5%	76.2%	44.7%
Atlanta C-3	188	89	47%	$11,246	33.3%	77.3%	44.0%
Marion Co. R-II	208	101	49%	$10,367	30.0%	73.9%	43.9%
Otterville R-VI	260	132	51%	$14,461	26.6%	70.0%	43.5%
Kirkwood R-VII	5,780	791	14%	$14,586	30.2%	72.2%	42.0%
Dora R-III	273	222	81%	$13,106	39.7%	80.0%	40.3%
Kirksville R-III	2,583	1,277	49%	$10,390	22.5%	61.9%	39.4%
Naylor R-II	411	250	61%	$7,957	38.9%	76.9%	38.0%
Howell Valley R-I	283	97	34%	$8,703	46.2%	82.8%	36.6%
Parkway C-2	16,603	3,284	20%	$14,371	34.8%	71.0%	36.2%
Rockwood R-VI	19,675	3,222	16%	$12,306	32.4%	68.3%	35.9%
Clayton	2,254	387	17%	$23,490	44.9%	80.7%	35.8%
Van Buren R-I	523	331	63%	$10,504	39.3%	74.8%	35.5%
Mountain View-Birch Tree R-III	1,163	840	72%	$8,855	33.6%	68.2%	34.7%
Southern Reynolds Co. R-II	485	343	71%	$16,943	33.7%	68.3%	34.6%
Columbia 93	18,171	8,247	45%	$13,230	27.3%	61.7%	34.4%
Maplewood-Richmond Heights	1,366	549	40%	$15,757	31.5%	65.1%	33.6%
Webster Groves	4,518	653	14%	$13,633	33.8%	67.1%	33.3%
Northeast Randolph Co. R-IV	395	130	33%	$16,765	41.6%	74.6%	33.0%
Centralia R-VI	1,371	454	33%	$9,241	25.5%	58.4%	32.9%

Sources: Missouri Department of Elementary and Secondary Education (DESE), Missouri Comprehensive Data System, Reports and Resources, Students, Missouri Assessment Program (MAP) data, School—content area all and disag 2018. Accessed on May 14, 2019 (https://apps.dese.mo.gov/MCDS/home.aspx); U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) Non-fiscal 2016–17 and Fiscal 2014–15.

Table 3: **Regression models for Missouri ELA and math school-level proficiency scores**

Year	Subject	Grade	Obs	R_2	Intercept	Urban coefficient	Urban *p*-value	Sig	FRPL coefficient	FRPL *p*-value	Sig
2014–15	ELA	4th	825	57.5%	80.9	–2.6	0.009	***	–.461	0.000	***
2015–16	ELA	4th	838	56.4%	85.0	–3.9	0.000	***	–.448	0.000	***
2016–17	ELA	4th	833	57.5%	85.9	–4.4	0.000	***	–.432	0.000	***
2014–15	Math	4th	827	50.1%	72.6	–3.2	0.009	***	–.486	0.000	***
2015–16	Math	4th	838	48.6%	76.3	–4.1	0.000	***	–.491	0.000	***
2016–17	Math	4th	832	49.4%	78.4	–5.5	0.000	***	–.492	0.000	***
2014–15	ELA	8th	437	42.1%	75.1	0.3	0.866		–.412	0.000	***
2015–16	ELA	8th	423	48.0%	77.0	–3.3	0.034	**	–.391	0.000	***
2016–17	ELA	8th	424	42.0%	76.3	–3.5	0.031	**	–.364	0.000	***
2014–15	Math	8th	399	20.3%	41.0	–0.2	0.914		–.297	0.000	***
2015–16	Math	8th	423	38.6%	56.9	5.7	0.003	***	–.440	0.000	***
2016–17	Math	8th	393	21.0%	43.7	–4.0	0.085	*	–.295	0.000	***

* Significant at the .10 level; ** significant at the .05 level; *** significant at the .01 level.

Sources: EdFacts data collection 2014–15, 2015–16, 2016–17; U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) 2014–15, 2015–16, 2016–17; author's analysis.

Table 4A: **Districts in the top 10 percent for either 4th-grade ELA or mathematics adjusted proficiency percentiles***

	English/Language Arts		Mathematics	
District	Average avg % prof 2014–15 through 2016–17	Average ELA avg adj prof percentile 2014–15 through 2016–17	Average of avg % prof 2014–15 through 2016–17	Average of avg adj prof percentile 2014–15 through 2016–17
Arcadia Valley R-II	84%	96%	79%	98%
Bismarck R-V	58%	94%	48%	92%
Braymer C-4	75%	82%	85%	97%
Campbell R-II	55%	50%	61%	92%
Caruthersville 18	65%	97%	67%	98%
El Dorado Springs R-II	54%	91%	54%	96%
Fair Play R-II	55%	96%	25%	52%
Festus R-VI	75%	69%	79%	90%
Fredericktown R-I	75%	93%	60%	78%
Hancock Place	72%	99%	70%	99%
Hickory Co. R-I	80%	95%	80%	97%
Kingston K-14	88%	100%	78%	100%
Lonedell R-XIV	80%	96%	75%	93%
Marceline R-V	85%	92%	75%	83%
Morgan Co. R-I	51%	86%	55%	95%
Naylor R-II	75%	95%	60%	82%
Orrick R-XI	95%	98%	75%	84%
Pierce City R-VI	75%	88%	71%	93%
Portageville	61%	69%	71%	92%
Salem R-80	52%	83%	47%	90%
Scott Co. Central	75%	99%	55%	96%
Sedalia 200	62%	94%	52%	94%
South Pemiscot Co. R-V	55%	91%	51%	94%
Southern Reynolds Co. R-II	68%	80%	81%	98%
St. James R-I	62%	58%	75%	94%
Webb City R-VII	82%	91%	79%	94%

*Charter schools are excluded.

Sources: EdFacts, Common Core of Data, author's analysis.

Table 4B: **Districts in the bottom 10 percent for either 4th-grade ELA or mathematics adjusted proficiency percentiles***

	English/Language Arts		Mathematics	
District	Average avg % prof 2014–15 through 2016–17	Average ELA avg adj prof percentile 2014–15 through 2016–17	Average of avg % prof 2014–15 through 2016–17	Average of avg adj prof percentile 2014–15 through 2016–17
Cooter R-IV	55%	20%	35%	6%
Doniphan R-I	49%	26%	20%	6%
Drexel R-IV	55%	20%	25%	1%
Glenwood R-VIII	35%	1%	20%	4%
Green Ridge R-VIII	50%	8%	35%	11%
Greenfield R-IV	45%	13%	20%	4%
Greenville R-II	48%	19%	21%	6%
Johnson Co. R-VII	35%	0%	28%	3%
Knox Co. R-I	50%	6%	30%	9%
Lafayette Co. C-1	50%	10%	34%	14%
Newburg R-II	35%	5%	45%	55%
North Callaway Co. R-I	52%	13%	25%	2%
Princeton R-V	55%	8%	65%	63%
Salisbury R-IV	60%	27%	35%	6%
Scott City R-I	46%	14%	23%	5%
Shelby Co. R-IV	51%	9%	31%	7%
Sherwood Cass R-VIII	55%	32%	22%	2%
Southern Boone Co. R-I	67%	18%	32%	1%
Spokane R-VII	50%	15%	34%	8%
Wellsville Middletown R-I	45%	4%	35%	13%
Winfield R-IV	47%	9%	47%	39%

*Charter schools are excluded.

Sources: EdFacts, Common Core of Data, author's analysis.

Table 5A: **Districts in the top 10 percent and bottom 10 percent for either 8th-grade ELA or mathematics adjusted proficiency percentiles***

	English/Language Arts		Mathematics	
District	Average of avg % prof 2014-15 through 2016-17	Average of avg adj prof percentile 2014-15 through 2016-17	Average of avg % prof 2014-15 through 2016-17	Average of avg adj prof percentile 2014-15 through 2016-17
Allen Village	71%	98%	26%	65%
Ava R-I	62%	73%	54%	94%
Brentwood	80%	84%	70%	97%
Center 58	49%	52%	52%	95%
Clarkton C-4	65%	97%	25%	76%
Clayton	87%	92%	74%	97%
Cole Camp R-I	68%	78%	75%	98%
Fair Play R-II	35%	52%	35%	94%
Forsyth R-III	57%	68%	49%	93%
Hickory Co. R-I	67%	76%	59%	96%
Jackson R-II	67%	56%	63%	95%
Kingston K-14	72%	99%	25%	83%
Kirbyville R-VI	75%	95%		
Ladue	82%	84%	65%	91%
Lakeland R-III	75%	92%	55%	93%
Lebanon R-III	55%	43%	49%	91%
Lindbergh Schools	81%	85%	66%	94%
Marionville R-IX	75%	91%	51%	79%
Nixa R-II	76%	80%	63%	92%
Oak Ridge R-VI	85%	95%	0%	
Richmond R-XVI	55%	37%	55%	93%
Rock Port R-II	85%	93%	65%	96%
Salem R-80	59%	96%	18%	64%
Stanberry R-II	85%	96%		
Thayer R-II	75%	94%	35%	54%
Winona R-III	45%	38%	55%	98%

*Charter schools are excluded.

Sources: EdFacts, Common Core of Data, author's analysis.

Table 5B: **Districts in the bottom 10 percent for either 4th-grade ELA or mathematics adjusted proficiency percentiles***

	English/Language Arts		Mathematics	
District	Average of avg % prof 2014-15 through 2016-17	Average of avg adj prof percentile 2014-15 through 2016-17	Average of avg % prof 2014-15 through 2016-17	Average of avg adj prof percentile 2014-15 through 2016-17
Adrian R-III	68%	56%	20%	9%
Chaffee R-II	38%	4%	8%	4%
Clinton	39%	4%	17%	16%
Concordia R-II	45%	1%	25%	3%
Dixon R-I	39%	6%	12%	10%
Excelsior Springs 40	42%	5%	17%	8%
Galena R-II	38%	7%	25%	40%
Kansas City 33	30%	7%	16%	35%
La Monte R-IV	35%	2%	5%	1%
Laclede Co. R-I	37%	3%	22%	28%
Lone Jack C-6	78%	70%	35%	4%
Meadow Heights R-II	55%	28%	15%	7%
Midway R-I	45%	4%	0%	
Paris R-II	45%	3%	25%	7%
Ralls Co. R-II	55%	31%	12%	4%
Rich Hill R-IV	15%	0%	15%	22%
Schuyler Co. R-I	40%	3%	20%	12%
Seneca R-VII	44%	10%	26%	37%
Union R-XI	49%	7%	20%	11%
Verona R-VII	40%	18%	15%	6%
Wheaton R-III	35%	6%	35%	77%
Winfield R-IV	47%	17%	12%	9%
Worth Co. R-III	55%	20%	15%	1%

*Charter schools are excluded.

Sources: EdFacts, Common Core of Data, author's analysis.

Table 6A: **Average 4th-Grade ELA and Math absolute and relative percentiles, Kansas City traditional public schools and charter schools, 2014–15 through 2016–17**

	4th-Grade English/Language Arts						4th-Grade Mathematics					
	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17
Kansas City 33	**11.3%**	**42.9%**	**9.7%**	**36.2%**	**9.5%**	**42.7%**	**14.2%**	**48.2%**	**10.3%**	**40.8%**	**11.7%**	**41.6%**
Kansas City Charter School Average	**25.7%**	**52.8%**	**28.0%**	**49.7%**	**21.4%**	**34.9%**	**27.5%**	**51.3%**	**27.2%**	**44.4%**	**19.9%**	**35.9%**
Academie Lafayette	76.7%	45.8%	96.4%	85.6%	86.7%	71.1%	91.2%	84.8%	92.1%	78.4%	74.3%	49.6%
Academy for Integrated Arts					5.1%	20.3%					5.3%	17.3%
Alta Vista												
Benjamin Banneker Academy	5.6%	25.3%	3.2%	14.3%	0.7%	1.6%	2.1%	12.1%	2.0%	11.9%	0.9%	11.4%
Brookside	7.5%	48.1%	13.9%	69.0%	8.5%	35.1%	8.6%	39.3%	29.8%	85.0%	10.9%	51.4%
Crossroads Academy of KC	80.6%	91.5%	54.6%	59.5%	69.6%	86.7%	79.6%	86.7%	14.6%	4.3%	13.5%	1.9%
Della Lamb Elementary	2.4%	17.3%	1.3%	4.9%	4.2%	25.6%	0.1%	8.3%	0.1%	8.8%	3.7%	21.6%
Ewing Marion Kauffman School												
Frontier School of Innovation												
Genesis School			1.9%	12.6%	7.5%	34.5%			12.6%	54.5%	22.1%	77.5%
Hogan Preparatory Academy	4.9%	25.1%	5.2%	19.0%	3.2%	8.8%	13.2%	62.8%	8.1%	34.8%	5.1%	27.4%
Kipp Endeavor Academy					2.1%	5.9%					32.5%	89.3%
Lee A. Tolbert Academy	14.6%	63.0%	13.6%	61.7%	18.5%	76.5%	3.8%	23.8%	3.6%	19.1%	8.4%	27.9%
Pathway Academy	14.2%	67.3%	4.2%	3.1%	2.8%	1.9%	10.9%	54.7%	11.4%	28.5%	4.6%	9.6%
University Academy	32.8%	75.8%	61.1%	93.9%	68.6%	96.5%	32.7%	60.3%	79.5%	97.7%	82.8%	98.4%

Note: Data exclude magnet schools, alternative schools and special education schools. Some included charter schools have since closed.

Source: EdFacts data collection 2014–15, 2015–16, 2016–17 and U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) 2014–15, 2015–16, 2016–17, and author's original analysis.

Table 6B: **Average 4th-Grade ELA and Math absolute and relative percentiles, St. Louis traditional public schools and charter schools, 2014–15 through 2016–17**

	4th-Grade English/Language Arts						4th-Grade Mathematics					
	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17
St. Louis City	**7.6%**	**39.3%**	**7.9%**	**31.6%**	**10.5%**	**33.7%**	**8.6%**	**33.8%**	**10.7%**	**40.0%**	**11.2%**	**35.4%**
St. Louis charter school average	**32.7%**	**65.0%**	**29.5%**	**55.1%**	**31.9%**	**43.0%**	**37.0%**	**56.8%**	**27.2%**	**48.7%**	**32.3%**	**50.0%**
Carondelet Leadership Academy	23.6%	88.2%	11.9%	51.3%	0.9%	0.8%	16.2%	63.4%	3.3%	23.2%	4.3%	28.2%
Confluence Academies	10.2%	50.6%	13.7%	57.2%	5.7%	30.6%	13.6%	57.8%	12.7%	49.0%	14.4%	52.6%
Eagle College Prep–Tower Grove			14.7%	76.1%					15.4%	53.6%		
Gateway Science Academy	65.3%	70.7%	55.5%	59.2%	53.5%	57.4%	49.8%	42.3%	52.1%	55.4%	57.9%	64.1%
Gateway Science Academy–Middle												
Grand Center Arts Academy												
Hawthorn Leadership School for Girls												
Kipp St. Louis												
Lift for Life Academy												
North Side Community School	37.1%	97.7%	77.8%	99.8%	99.6%	99.9%	80.5%	99.8%	57.9%	98.2%	86.5%	99.6%
Preclarus Master Academy												
South City Preparatory Academy												
St. Louis Language Immersion School	28.9%	32.2%	27.5%	41.3%	41.0%	79.4%	25.1%	25.0%	22.2%	27.3%	32.0%	52.3%
St. Louis Charter School	31.2%	50.5%	5.1%	0.6%	22.4%	32.4%	36.8%	52.6%	26.8%	34.2%	30.5%	43.8%

Note: Data exclude magnet schools, alternative schools and special education schools. Some included charter schools have since closed.

Source: EdFacts data collection 2014–15, 2015–16, 2016–17 and U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) 2014–15, 2015–16, 2016–17, and author's original analysis.

Table 6C: **Average 8th-Grade ELA and Math absolute and relative percentiles, Kansas City traditional public schools and charter schools, 2014–15 through 2016–17**

	8th-Grade English/Language Arts						8th-Grade Mathematics					
	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17
Kansas City 33	1.9%	10.6%	1.0%	5.0%	1.7%	5.7%	8.2%	39.6%	3.8%	18.6%	3.1%	33.4%
Kansas City Charter School Average	38.0%	58.9%	39.5%	68.4%	30.4%	56.1%	45.2%	59.6%	46.6%	61.8%	25.9%	45.2%
Academie Lafayette	93.2%	75.5%	98.1%	94.6%	98.2%	96.2%	73.3%	48.4%	94.2%	73.5%	44.3%	19.8%
Academy for Integrated Arts												
Alta Vista	14.4%	43.2%	2.3%	7.8%	5.1%	13.9%	8.2%	26.1%	26.5%	70.7%	3.5%	27.0%
Benjamin Banneker Academy	%	%	%	%	6.0%	42.7%	%	%	%	%	9.2%	41.0%
Brookside	8.6%	53.1%	17.9%	85.3%	40.3%	95.0%	29.7%	63.9%	50.0%	88.7%		
Crossroads Academy of KC												
Della Lamb Elementary	2.9%	19.9%	8.4%	47.3%	0.7%	1.9%	6.9%	38.3%	2.8%	12.3%	7.0%	39.9%
Ewing Marion Kauffman School	97.7%	99.5%	94.4%	99.1%	94.0%	98.8%	99.5%	99.7%	99.5%	99.8%	99.3%	99.2%
Frontier School of Innovation	34.7%	54.1%	10.3%	49.1%	22.5%	76.3%	78.2%	93.2%	38.4%	72.6%	5.5%	22.1%
Genesis School												
Hogan Preparatory Academy	4.5%	26.1%	4.2%	23.4%	2.3%	8.0%	4.2%	32.1%	0.9%	7.1%	2.2%	30.8%
Kipp Endeavor Academy	15.1%	69.6%	52.1%	98.1%	5.8%	25.7%	%	%	92.8%	99.1%	%	%
Lee A. Tolbert Academy	10.4%	49.2%	17.4%	81.1%	15.2%	74.8%	8.4%	35.8%	9.8%	34.8%	24.1%	64.4%
Pathway Academy												
University Academy	98.9%	99.1%	89.5%	98.6%	44.5%	84.0%	98.0%	99.0%	50.9%	59.6%	38.3%	62.3%

Note: Data exclude magnet schools, alternative schools and special education schools. Some included charter schools have since closed.

Source: EdFacts data collection 2014–15, 2015–16, 2016–17 and U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) 2014–15, 2015–16, 2016–17, and author's original analysis.

Table 6D: **Average 8th-Grade ELA and Math absolute and relative percentiles, St. Louis traditional public schools and charter schools, 2014–15 through 2016–17**

	8th-Grade English/Language Arts						8th-Grade Mathematics					
	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17	Avg. of absolute percentile 2014–15	Avg. of adjusted percentile 2014–15	Avg. of absolute percentile 2015–16	Avg. of adjusted percentile 2015–16	Avg. of absolute percentile 2016–17	Avg. of adjusted percentile 2016–17
St. Louis City	15.4%	28.9%	15.0%	24.6%	15.4%	25.7%	15.9%	42.4%	21.1%	37.9%	16.3%	44.9%
St. Louis charter school average	32.7%	62.3%	18.1%	42.7%	24.8%	43.8%	32.6%	48.9%	34.5%	48.2%	22.2%	39.7%
Carondelet Leadership Academy												
Confluence Academies	16.1%	59.5%	3.3%	13.8%	21.1%	48.7%	40.1%	74.8%	3.6%	19.5%	37.4%	63.9%
Eagle College Prep–Tower Grove												
Gateway Science Academy												
Gateway Science Academy–Middle	74.5%	67.7%	56.5%	51.5%	44.7%	34.4%	49.5%	34.8%	79.5%	64.1%	8.7%	2.8%
Grand Center Arts Academy	55.0%	71.2%	22.3%	35.5%	24.0%	50.7%	44.8%	50.9%	11.2%	3.8%	17.2%	23.4%
Hawthorn Leadership School for Girls					30.9%	78.1%						
Kipp St. Louis	42.1%	90.8%	25.8%	96.5%	66.6%	98.6%			82.6%	98.8%	83.1%	98.5%
Lift for Life Academy	1.4%	3.9%	1.6%	3.3%	2.5%	7.5%	17.3%	57.4%	3.5%	18.0%	11.2%	45.8%
North Side Community School												
Preclarus Master Academy	21.8%	84.9%	17.7%	85.1%	3.7%	12.5%	10.1%	38.8%	22.6%	70.2%	7.7%	38.2%
South City Preparatory Academy	21.4%	84.7%	7.4%	46.3%	3.9%	13.2%			46.3%	88.9%	8.0%	38.4%
St. Louis Language Immersion School	29.3%	35.9%	10.0%	9.2%	25.6%	50.5%	33.7%	36.8%	26.7%	22.5%	4.7%	6.6%
St. Louis Charter School	%	%	%	%	%	%	%	%	%	%	%	%

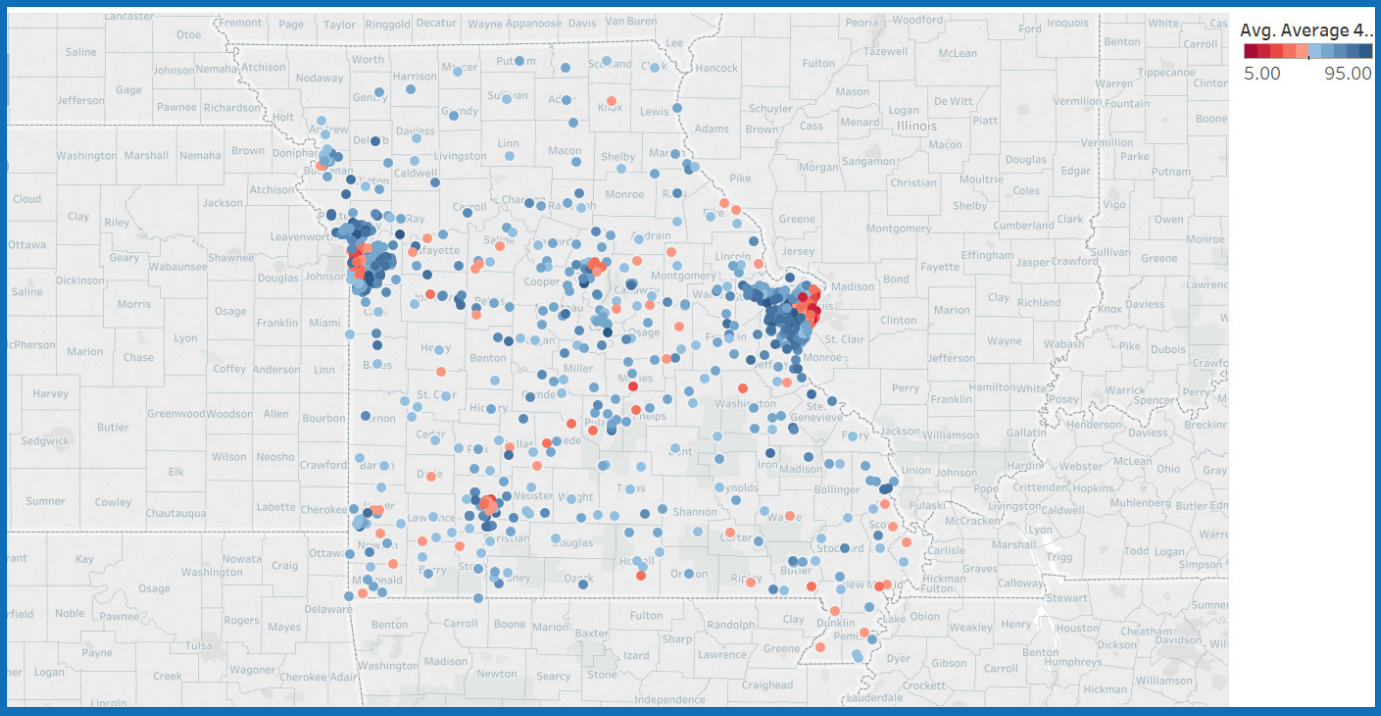
Note: Data exclude magnet schools, alternative schools and special education schools. Some included charter schools have since closed.

Source: EdFacts data collection 2014–15, 2015–16, 2016–17 and U.S. Department of Education, National Center for Education Statistics (NCES) Common Core of Data (CCD) 2014–15, 2015–16, 2016–17, and author's original analysis.

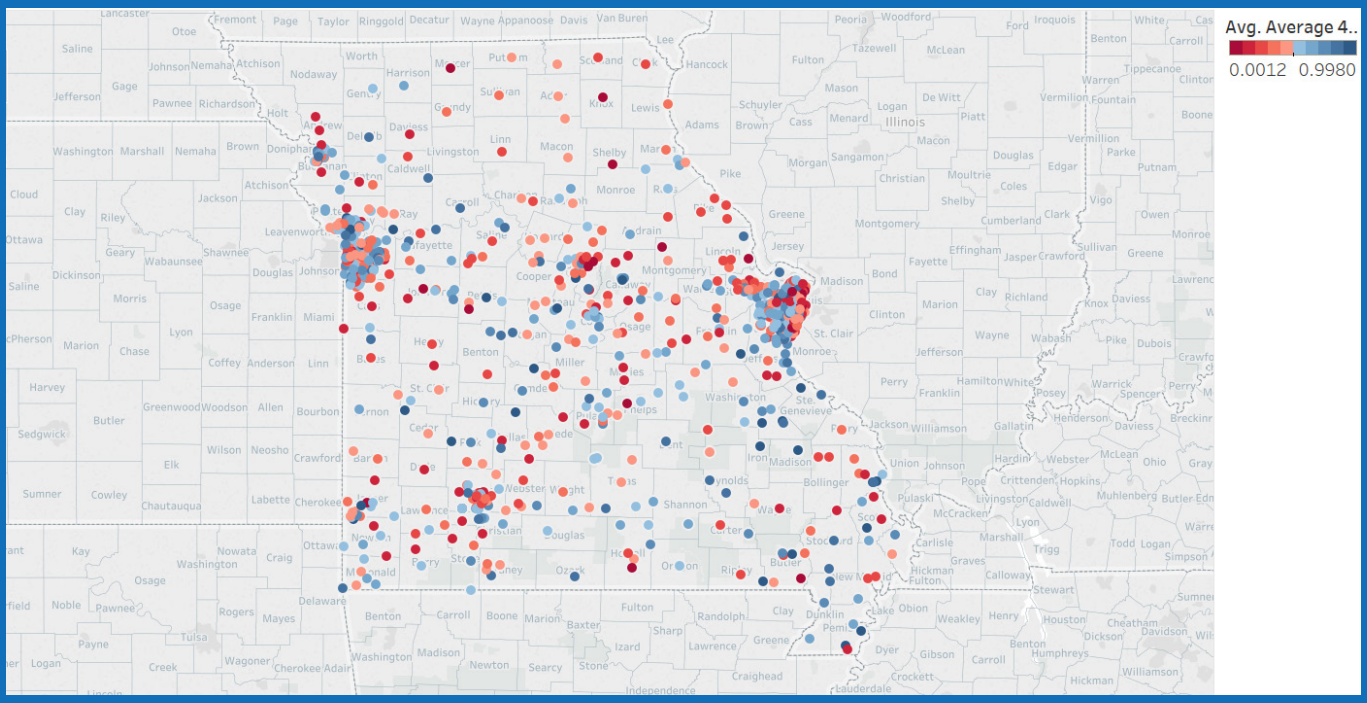
APPENDIX 2

Three-year average of school-level percentage proficient in 4th-grade English/language arts: 2014–15 through 2016–17.

Map 1: Absolute percentile ranking

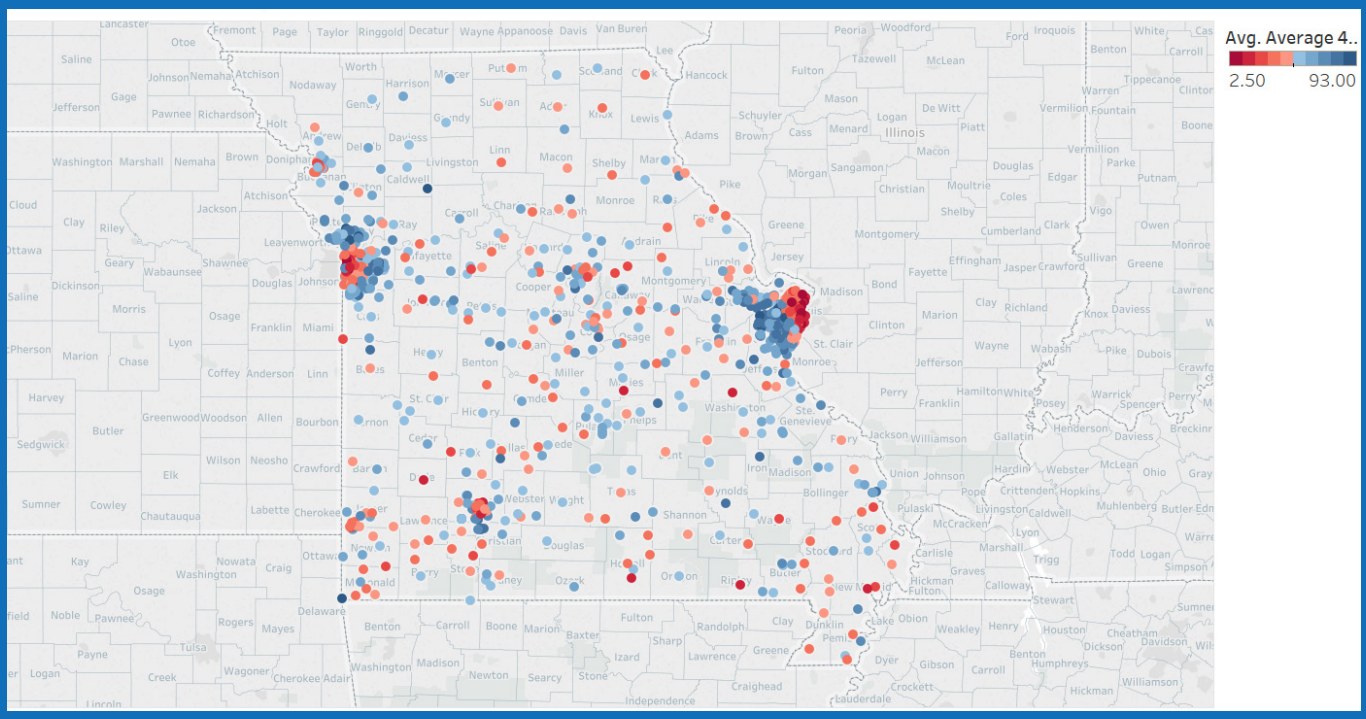


Map 2: Adjusted percentile ranking

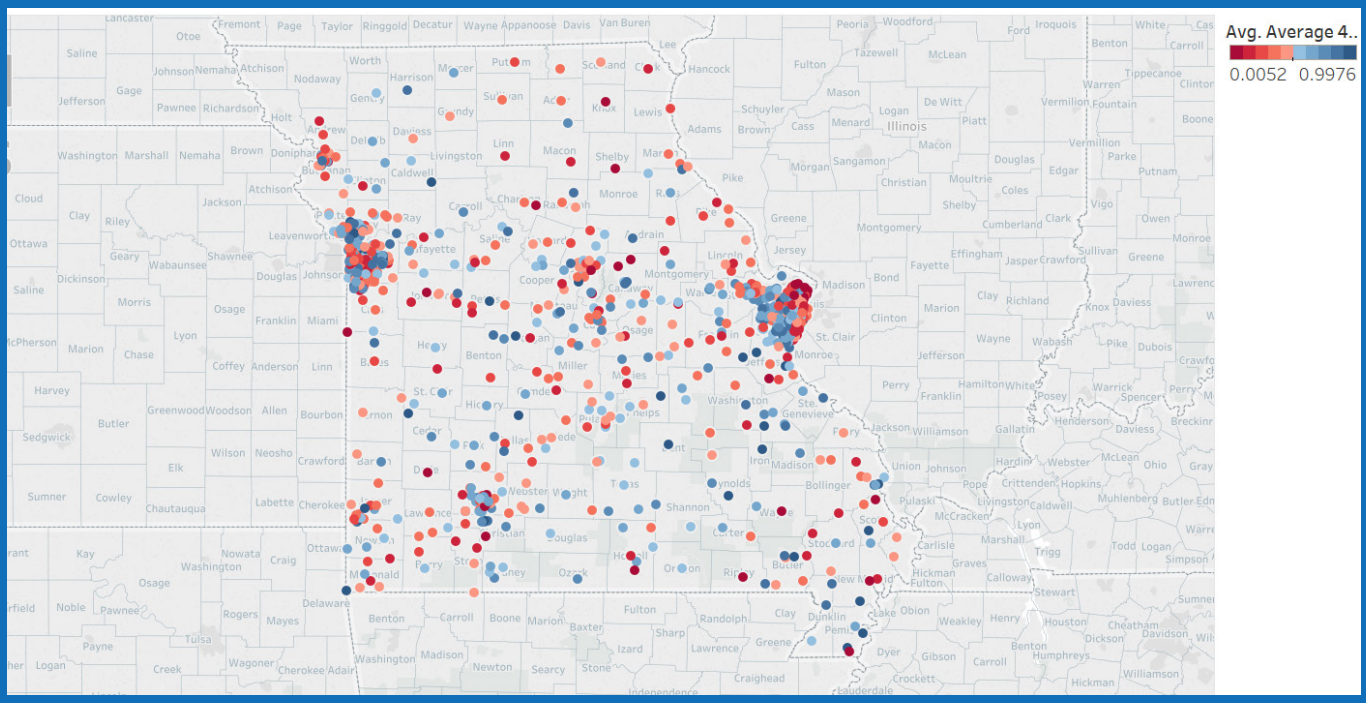


Three-year average of school-level percentage proficient in 4th-grade math: 2014–15 through 2016–17.

Map 3: Absolute percentile ranking

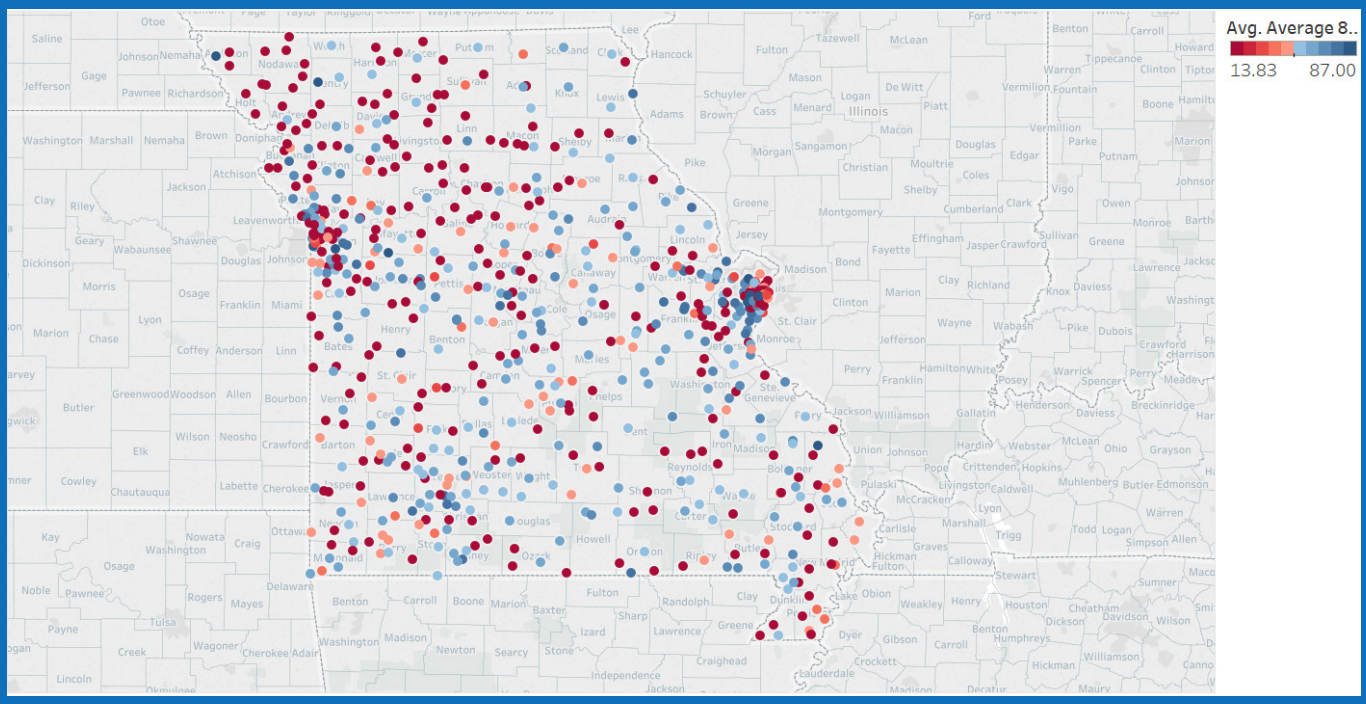


Map 4: Adjusted percentile ranking

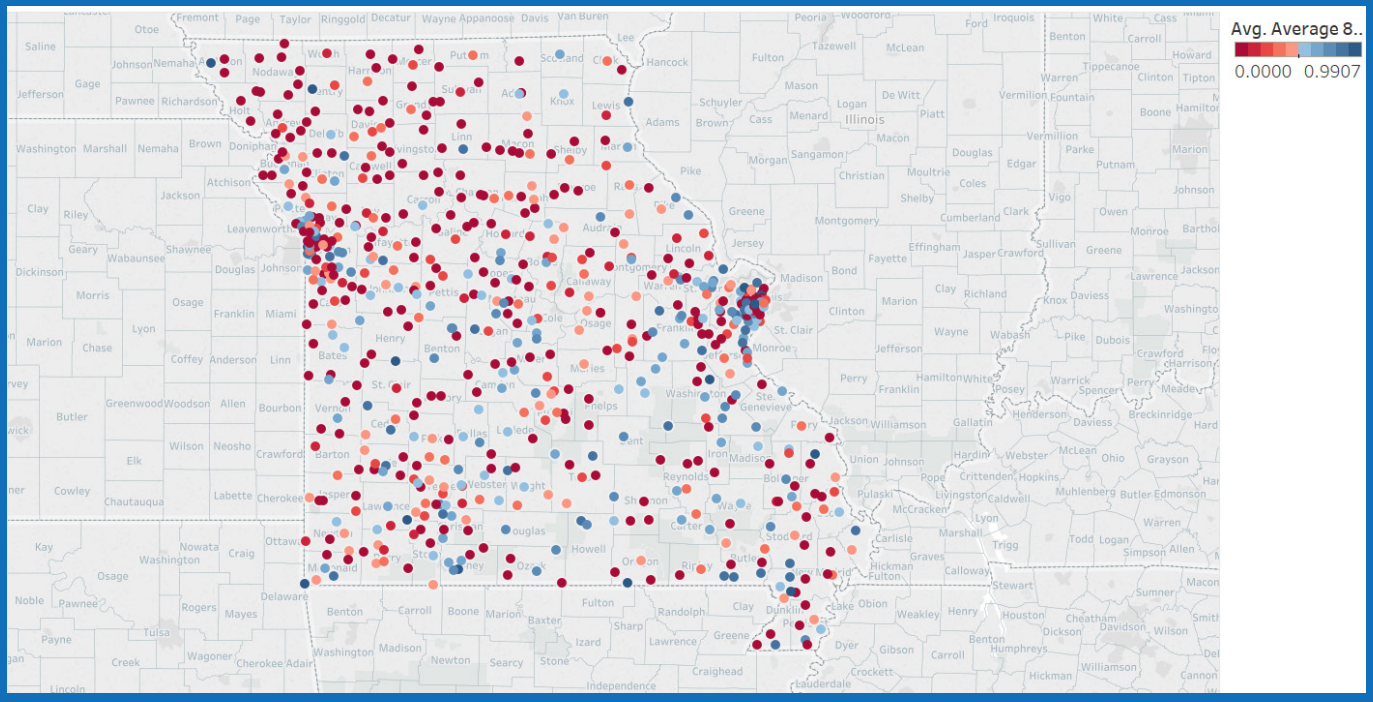


Three-year average of school-level percentage proficient in 8th-grade English/language arts: 2014–15 through 2016–17.

Map 5: Absolute percentile ranking

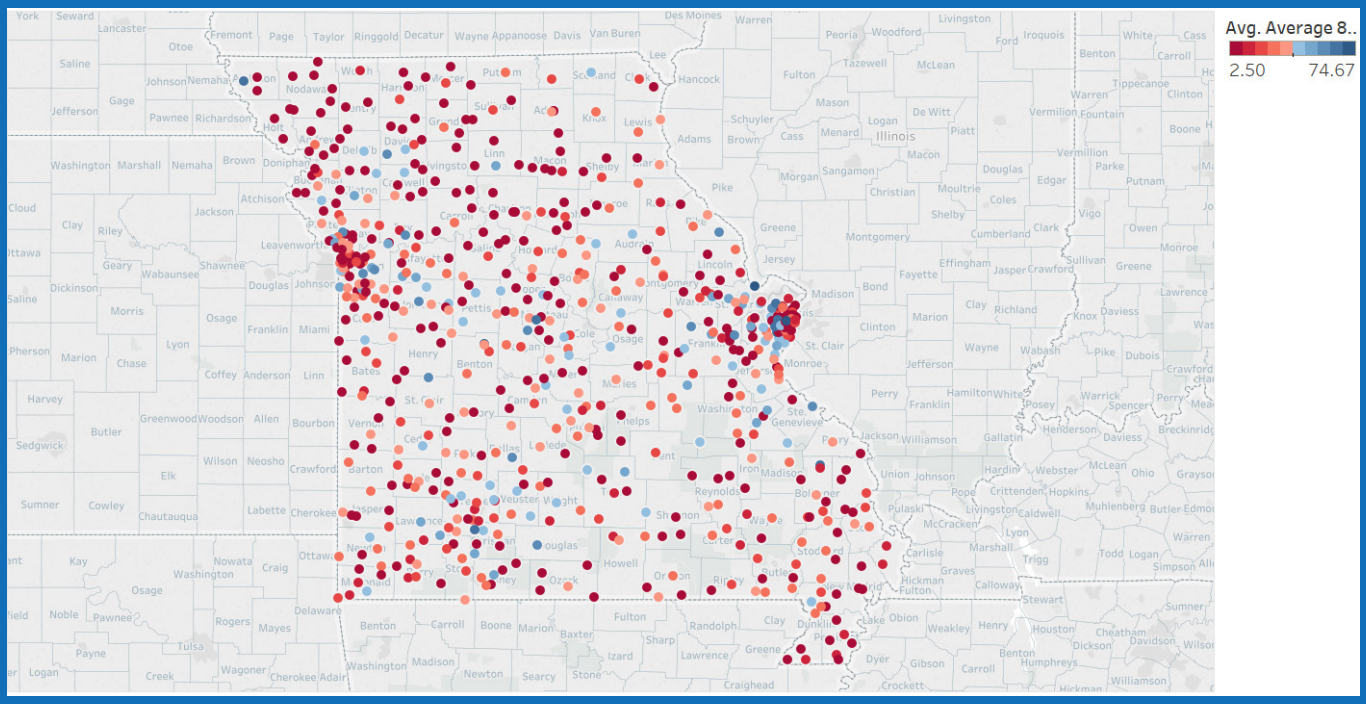


Map 6: Adjusted percentile ranking

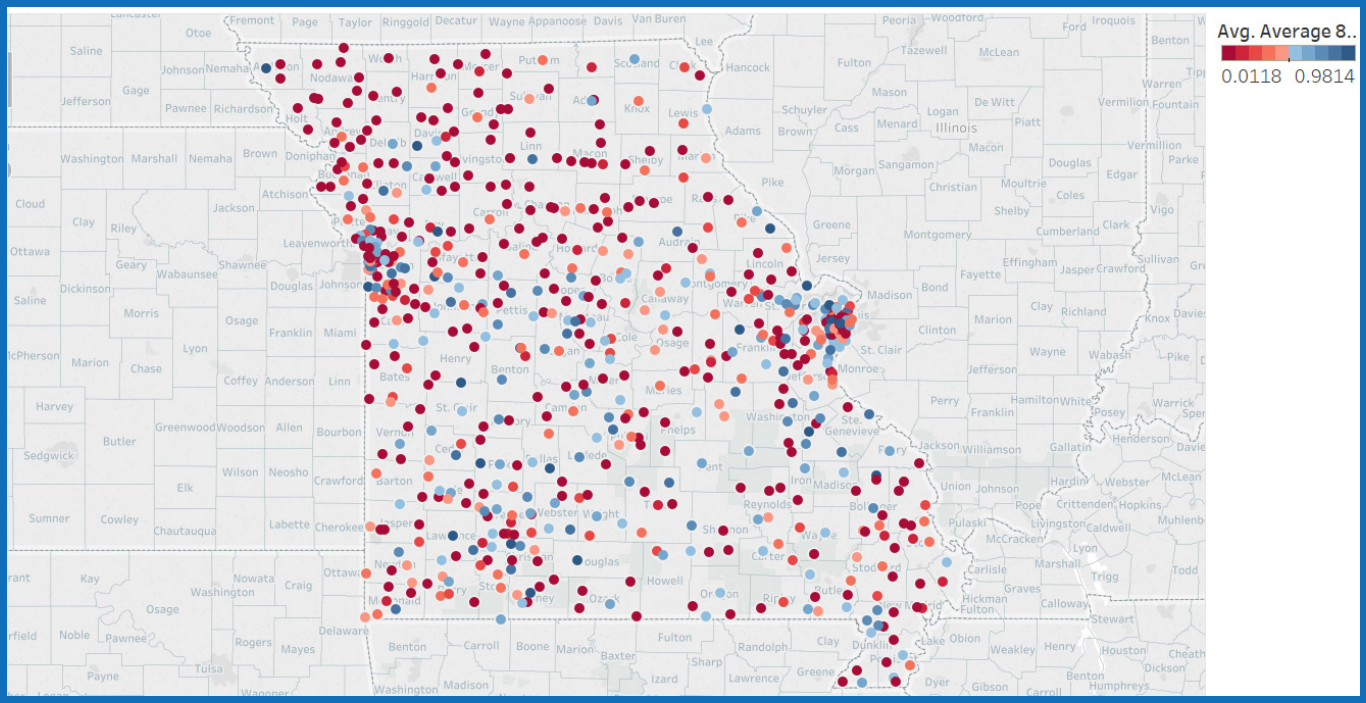


Three-year average of school-level percentage proficient in 8th-grade math: 2014–15 through 2016–17.

Map 7: Absolute percentile ranking



Map 8: Adjusted percentile ranking



NOTES

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