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Dollars and Data: Colorado Education Data and Trends

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About the Authors



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About Common Sense Institute

Common Sense Institute is a non-partisan research organization dedicated to the protection and promotion of Colorado's economy. CSI is at the forefront of important discussions concerning the future of free enterprise and aims to have an impact on the issues that matter most to Coloradans. CSI's mission is to examine the fiscal impacts of policies, initiatives, and proposed laws so that Coloradans are educated and informed on issues impacting their lives. CSI employs rigorous research techniques and dynamic modeling to evaluate the potential impact of these measures on the Colorado economy and individual opportunity.

Teams & Fellows Statement

CSI is committed to independent, in-depth research that examines the impacts of policies, initiatives, and proposed laws so that Coloradans are educated and informed on issues impacting their lives. CSI's commitment to institutional independence is rooted in the individual independence of our researchers, economists, and fellows. At the core of CSI's mission is a belief in the power of the free enterprise system. Our work explores ideas that protect and promote jobs and the economy, and the CSI team and fellows take part in this pursuit with academic freedom. Our team's work is informed by data-driven research and evidence. The views and opinions of fellows do not reflect the institutional views of CSI. CSI operates independently of any political party and does not take positions.

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Introduction

On many fronts, Colorado's public education system has recovered slowly from the COVID-19 pandemic's damage. While unprecedented levels of federal funding will continue through the summer of 2024, the state has yet to recover from enrollment declines and learning loss, both direct impacts of decisions to close schools to in-person learning for extended periods of time in 2020 and 2021.

As we reported last year, local, state, and federal dollars continue to flow to the Colorado public education system in ever-larger amounts, continuing a longstanding pre-pandemic trend. While some argue Colorado's public schools are underfunded, the school system continues to receive larger contributions from local, state, and federal sources year after year. Since 2020 total public education revenue from all sources has climbed 9.6% from \$14.6 billion to \$16 billion.

At the same time, student enrollment steadily declined for many districts and is forecasted to keep sliding downward for the foreseeable future. In 2022-23, statewide public school enrollment was almost 30,000 students below its 2020 peak – a drop of 3.1%.

Student achievement, as reflected in the Colorado Measures of Academic Success (CMAS) results, has yet to recover from massive declines in the immediate aftermath of the pandemic. While math scores improved modestly in 2022-23, English Language Arts scores dropped after recovering somewhat the previous year.

Each year, the Colorado Department of Education releases a new set of data capturing the finances of Colorado's PK-12 public education system. This report summarizes several different dimensions of the financial data and shows key trends in how education funding and spending has changed over time.

While unprecedented levels of federal funding will continue through the summer of 2024, the state has yet to recover from enrollment declines and learning loss.

Key Findings

Many of our findings from this year's CDE data closely mirror last year's. While funding remains robust ahead of an anticipated drop in federal funding, increased spending has not led to substantial gains in student learning. Many districts continue to spend a disproportionate share of their funding on administration rather than closer to classrooms.

Achievement gaps between lower-income and more affluent students have widened since 2019, when the gap was 29.6 percentage points in math and 30.1 percentage points in English. In 2023 the gaps were 32.8 percentage points and 31 percentage points respectively. They also widened in both subjects between 2022 and 2023.

While enrollment leveled out in 2021-2022 after a steep plunge, it dropped markedly again in the 2022-2023 school year.

- Statewide K-12 enrollment dropped by 5,004 students between 2021-22 and 2022-23. The 22,000-student plunge in 2020-21 appeared to have slowed in 2022, as there was only a decrease of 1,174 students. However, last year's enrollment decline indicates lingering pandemic effects. Before the 2021 school year, K-12 enrollment grew every year since 2012, albeit at a declining rate.
- Including Pre-K, enrollment has dropped by 38,800 students or 4% since 2020. Over that period Denver metro districts accounted for 73% of the statewide enrollment decline despite being just 53% of total school population.
- Total enrollment in every region is lower in 2023 than 2020 except for in Northeast, which has added 3,126 students, growing 21%.
- Since 2020, grades PreK-8 have seen enrollment drops, while grades 9-12 have seen modest enrollment increases.

Public education funding continues to increase despite declining enrollment.

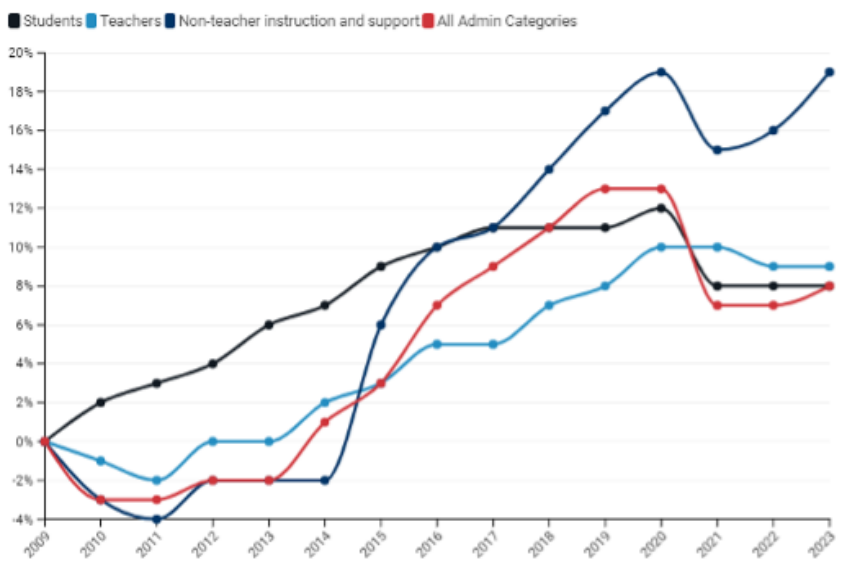
- Public education spending is largely dictated by a funded pupil count, rather than an actual enrollment count. The funded pupil formula averages prior year trends, and therefore has not declined at the same rate as total enrollment. While total statewide student FTE count has declined by 4.6% between 2020 and 2023, the total funding pupil count has declined by just 1.9%.
- Total revenue per funded student from state, local and federal sources grew to \$16,281 in FY23, 10% above 2020 levels. Funding from other sources such as bond proceeds added an additional \$2,174 in funding per student.
- Federal funding as a percentage of overall education funding for Colorado almost certainly peaked in 2022 at 10.7%. That number should begin to shrink as federal Covid relief dollars expire. Between 2020 and 2022 federal revenue per student increased 86%, while local revenue grew 6% and state revenue grew 4% on a per funded pupil basis.
- State revenue comprises a greater share of total education revenue in poorer, more rural regions of the state.

Education spending growth shows a growing share outside of instruction and teacher pay and has not produced broad increases in student outcomes.

- Total education expenditures grew to \$16.01 billion in 2022, an increase of \$705 million (5%) from 2021, and an increase of \$4.15 billion (35%) from 2017. Instruction and support expenditures totaled \$12.24 billion in 2022, an increase of \$1.03 billion (9.2%) from 2021, and \$2.93 billion (31%) from 2017.
- Colorado Department of Education spending category reports indicate the share of spending on instruction shrank over the last five and 10 years from 43.4% in 2017, to 40.6% in 2022. The share of spending on support and other categories grew.
- Instructional salaries and benefits, however, remain the largest expenditure categories in all regions of the state. They are most pronounced in Denver Metro school districts.
- Total staff headcounts over the past 15 years reflect a shift in school staffing strategies favoring more non-teacher instruction and support staff. Teacher and administrative headcounts grew at similar rates as student growth, while non-teacher instruction and support staff headcounts grew at more than twice the student growth rate. (**Figure 1**)

Figure 1

Public Education Staff Growth Relative to Student Population Growth

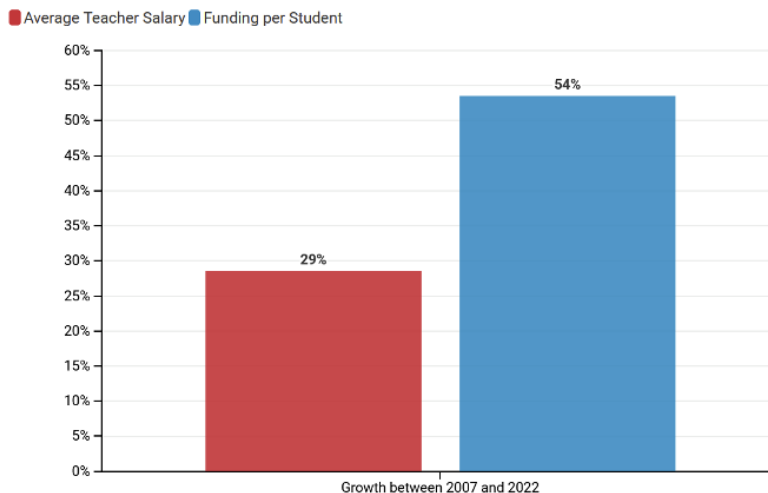


- The gap between teacher salary growth and overall spending growth continues to widen. Since 2007 overall spending grew by 54%, while the average teacher salary grew by 29%. (**Figure2**)
- Student outcomes have not kept pace with spending. Third grade reading and math proficiency rates have not returned to pre-pandemic levels.

Figure 2

Growth of Teacher Salaries and Per-pupil Education Funding in Colorado from 2007 to 2022

Over the last 15 years, education revenue per pupil has increased by over 50% and the average teacher salary has grown by under 30%.



Part 1: Enrollment

The 2022-23 school year dashed hopes that enrollments would climb back to prepandemic levels. Prior to the pandemic, enrollment was increasing year over year, but the rate of growth had been slowing over time (see **Figure 3**). From 2010 to 2015, the rate of growth was between a 1.1% and 1.6% increase. That rate slowed in 2016-17 and was down to just 0.1% in 2018. When COVID-19 hit in 2020, the public K-12 system lost over 21,800 students, representing a 3.3% decline in enrollment. Enrollment dropped by 5,000 students after losing just 1,174 the year before.

Figure 3: Colorado K-12 enrollment over time

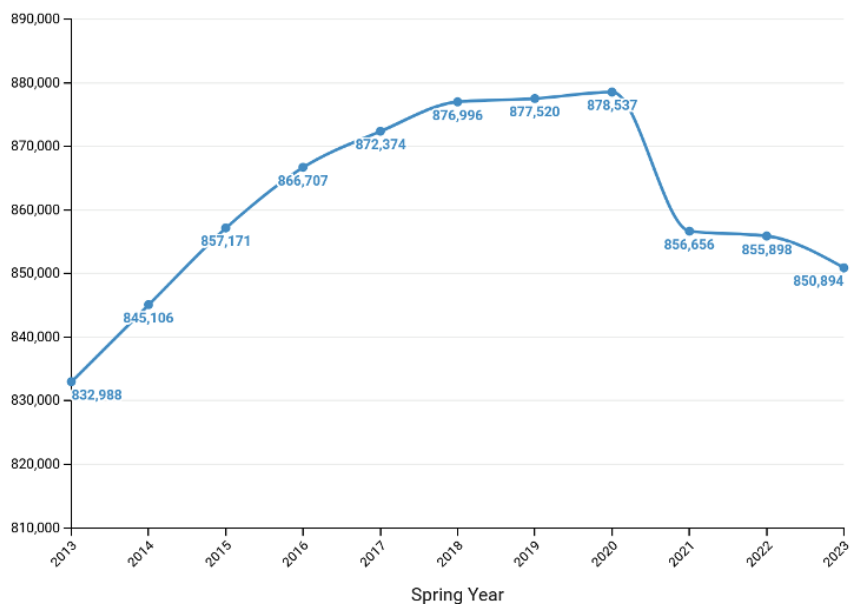
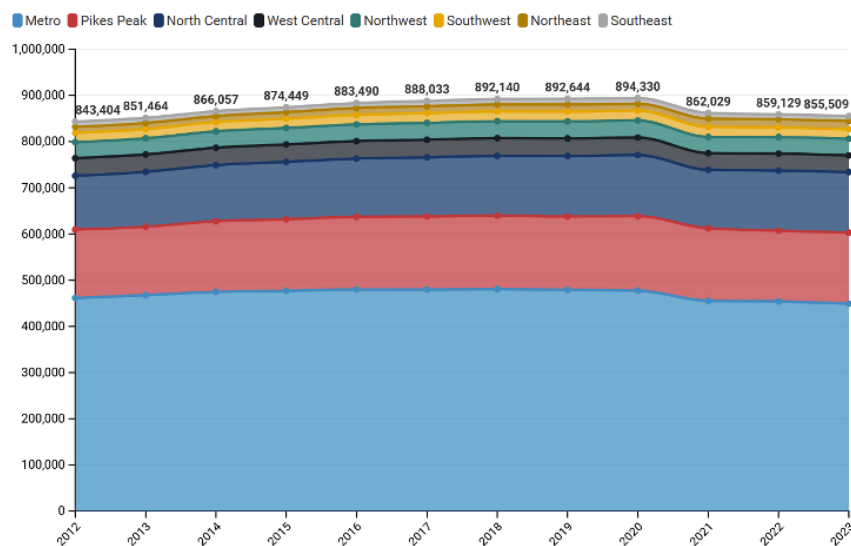


Figure 4: PreK-12 Enrollment by region

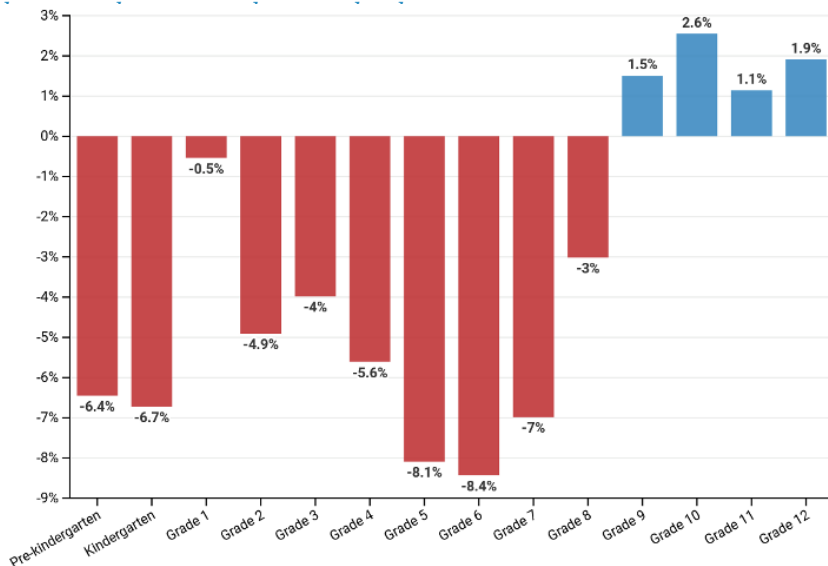


Enrollment drops are a Denver metro issue. Statewide K-12 enrollment is down by 27,500 students from the peak in 2020. Those declines, however, are not evenly distributed. As **Figure 4** shows, virtually all of the enrollment loss has come from Denver metro-area districts. Four regions – Pikes Peak, North-central, Northeast and Southeast saw modest enrollment increases.

Despite year-over-year increases in four regions, all regions except Northeast remain below 2020 enrollment levels.

Declining enrollment is also an issue of younger children. Enrollment has increased since 2020 only at the high-school level, which implies that the statewide decline has mostly been caused by departures of young students and decreased enrollment of kids reaching school age. Steep enrollment declines in the earliest grades continued in 2022 (down 6.4% compared to 2020), albeit it in a less dramatic fashion than in 2021 when prekindergarten enrollment was down by 10.3% from 2020. As these enrollment declines roll up through the grade levels, overall drops in enrollment could look increasingly pronounced.

Figure 5: Enrollment changes by grade



Part 2: Revenue

K-12 public education revenue comes from four main funding sources: Local, State, Federal and Other. Local revenue comes from property tax, specific ownership tax and other funds produced within a school district for public education. This category includes mill levy overrides and mills for bonded indebtedness. State revenue includes all funds collected by the state government that are then appropriated to school districts, including per-pupil funding, program funding and other state grants and projects. Federal revenue is any money distributed to the school district from the federal government, whether directly or through an intervening agency like the Colorado Department of Education.

Federal dollars typically require specific spending. Federal funding, for example, is used to support educational services for students with disabilities and English Language Learners and to fund programs at districts and schools that have high levels of low-income students.

Figure 6: History of total revenue (including other sources)

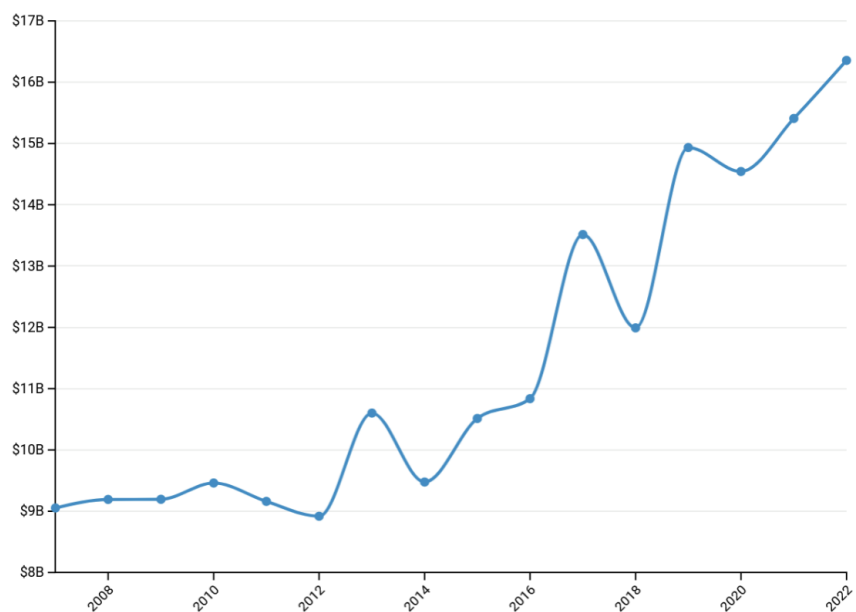


Figure 6 shows Colorado school funding continues to rise roughly in line with its 10-year history. In large part because of a massive federal infusion of dollars, the pandemic does not appear to have produced a long-term funding shortfall.

As noted above, federal revenue is a larger part of school funding now than has historically been the case. While this has caused the share of local and state funding to decline, state and local revenue reached all-time highs in 2022. As federal pandemic era funding declines, local and state funding is expected to continue to grow under current conditions. State lawmakers have indicated that they intend to meet the state’s constitutional education funding obligation in next year’s budget by fully reducing the budget stabilization factor.

Figure 7: Major revenue sources for K-12 public education as shares of total (excluding other sources)

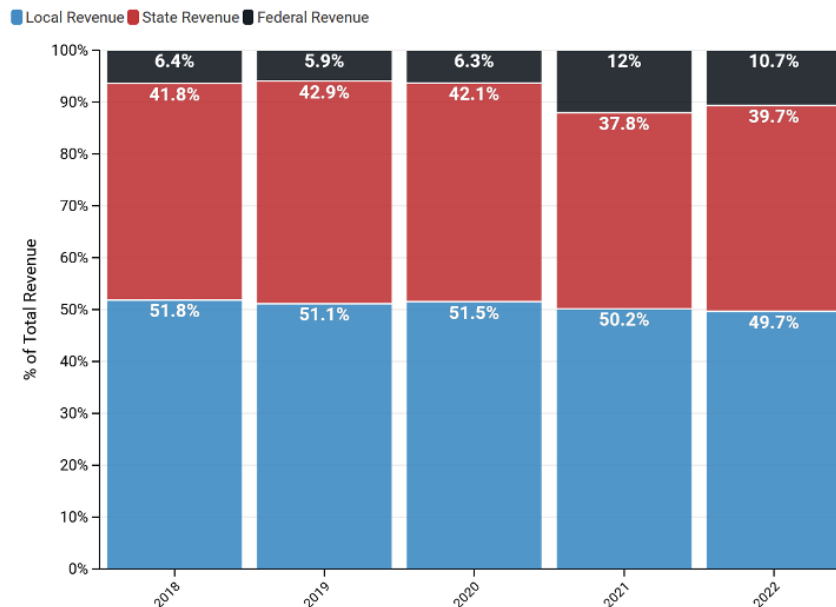
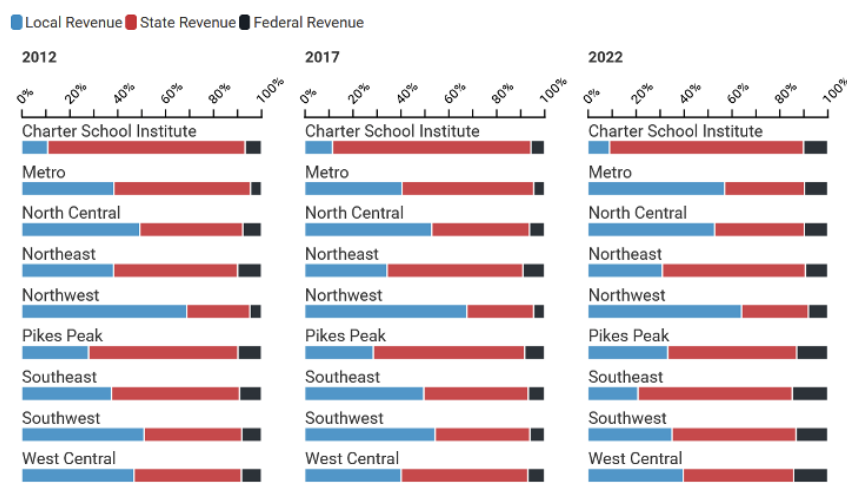


Figure 8: Local, state, and federal revenue as shares of total revenue by region



There are significant regional variations in the relative distribution of local, state, and federal funds to school districts. The rural southeast region receives the lowest share of local funding, presumably due to tepid property tax growth.

With the exception of the non-geographical Charter School Institute, the local share of regional revenue is a strong indicator of the relative wealth of the regions’ school districts.

Part 3: Expenditures

Public education expenditures generally fall into: Instructional Services (staff salaries and benefits, supplies and materials, purchased services, capital outlays, and other); and Support Services (district and school administration, operations and maintenance, pupil transportation, food services, and 'other')

Driven in large part by the massive infusion of federal dollars, education spending in 2022 hit its highest level ever in Colorado, at \$16 billion.

The share of spending on instruction has fallen in the last 10 years while spending on support services has risen. In 2022, Instructional Services accounted for 40.6% of total spending, while support services comprised 35.8% and 'other' spending accounted for the remaining 23.7%. The Colorado Department of Education's definition of 'other expenditures' is "amounts paid for all expenditures other than Instruction, Support Services, and Community Services."

Figure 9: Total Annual Public Education Expenditures

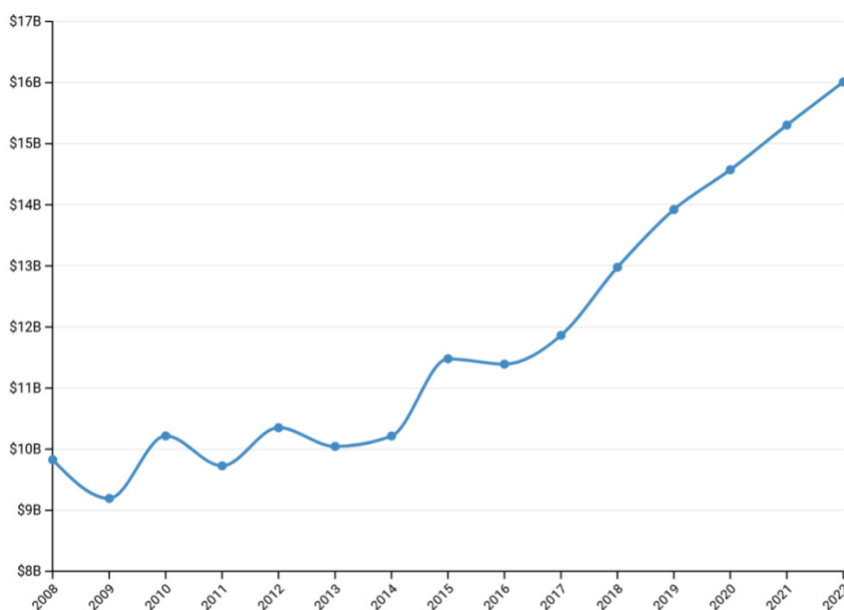
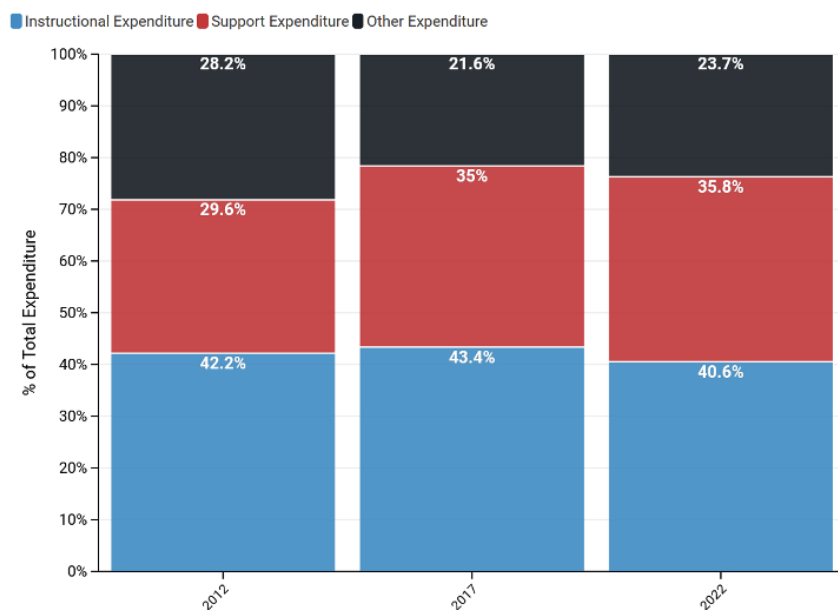


Figure 10: Shares of major expenditures in public education



The state defines enrollment as the straightforward student headcount. “Funded pupil count,” which controls how much funding schools receive through the School Finance Act, is determined by a formula based on current enrollment and previous years’ enrollment trends. The formula guarantees that the funded pupil count declines at a slower rate than the headcount during periods of falling enrollment, presumably to help prevent underfunding struggling schools.

Figure 11: Growth in enrollment, funded pupil counts, and classroom expenditure since 2008

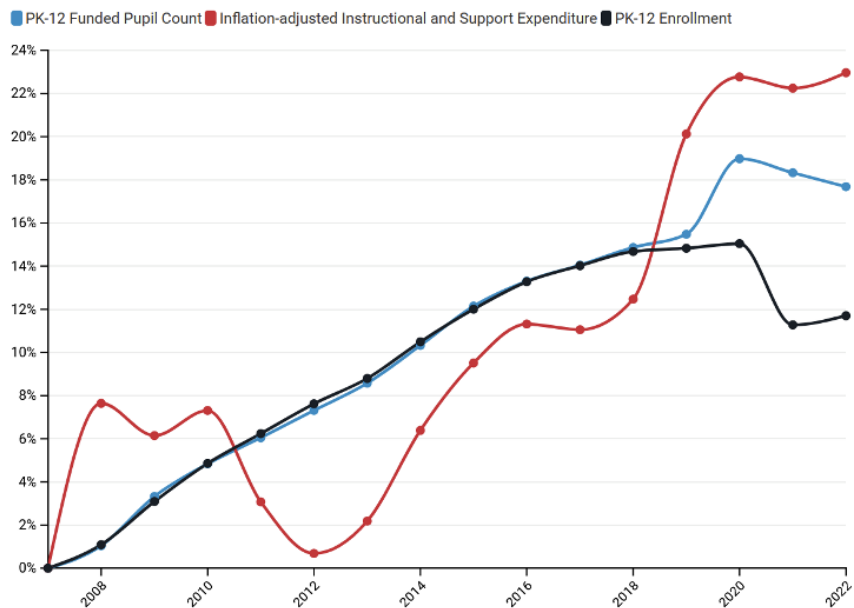


Figure 12: History of total expenditures by region

Region	Trend	FY 2012	FY 2017	FY 2022
Charter School Institute		\$78M	\$172M	\$314M
Metro		\$5,644M	\$6,644M	\$8,346M
North Central		\$1,345M	\$1,563M	\$2,522M
Northeast		\$184M	\$180M	\$278M
Northwest		\$659M	\$658M	\$811M
Pikes Peak		\$1,497M	\$1,723M	\$2,472M
Southeast		\$132M	\$128M	\$222M
Southwest		\$292M	\$290M	\$374M
West Central		\$463M	\$442M	\$584M
State Total		\$10,294M	\$11,800M	\$15,923M

Figure 12 illustrates total expenditures by region for three years. Significant jumps in expenditures between 2017 and 2022 reflect the major infusion of Covid-19 relief dollars.

Figure 13 illustrates per pupil spending on instruction and support by region for three years.

Figure 14 provides a more granular look at spending by region in 2021. Variations by region are modest. Once again, federal COVID-19 relief funds are reflected in big jumps in spending between 2017 and 2022.

- The metro region spends the largest share of its instruction/support spending on teacher salaries and benefits.
- Rural districts devote large shares of their instruction/support spending to matters other than compensation and direct student/staff support largely due to especially high transportation and material costs.
- Instructional salaries are generally rising, but they have become smaller shares of spending. This indicates the potential for some crowding-out by spending priorities like administration and operations, both of which occupy larger shares of district budgets than they used to.

Figure 13: Instruction and support expenditures per pupil by region

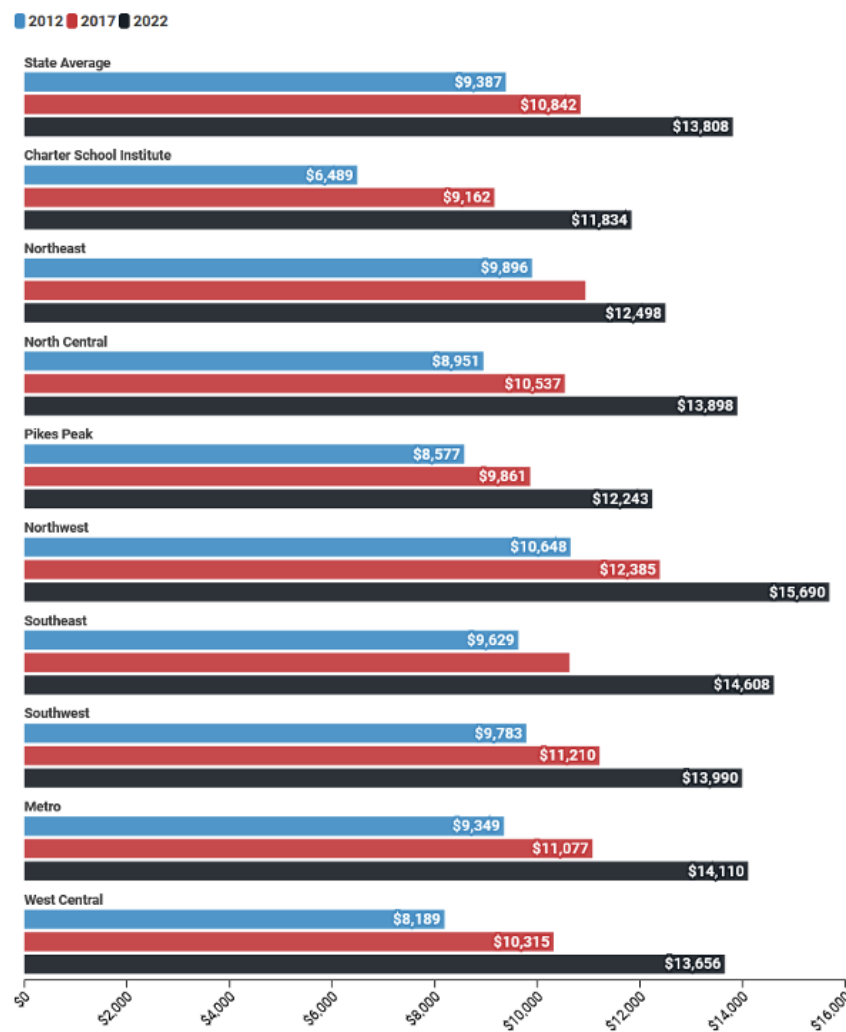
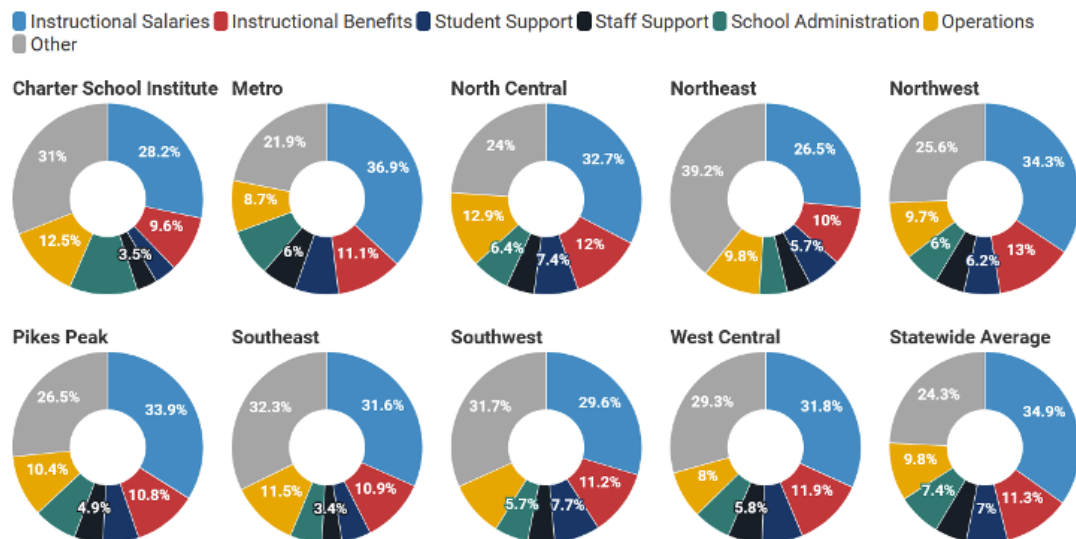


Figure 14: Regional shares of total instructional and support expenditure by category in 2022



Part 4: Teacher salaries and turnover

Statewide, the average salary remained over \$60,000 in 2023, an increase of 16.1% increase since 2017. There are significant disparities by region, though: The average teacher salary in the Southeast was \$42,298, while in the metro region it was \$66,657. Also, salaries have grown noticeably less in regions with lower baseline averages.

Figure 16: Average regional teacher salaries over time

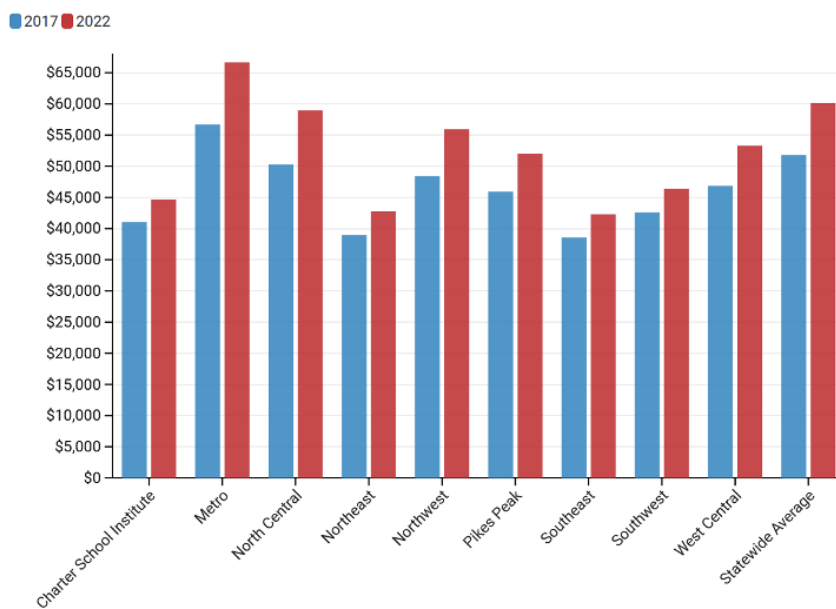
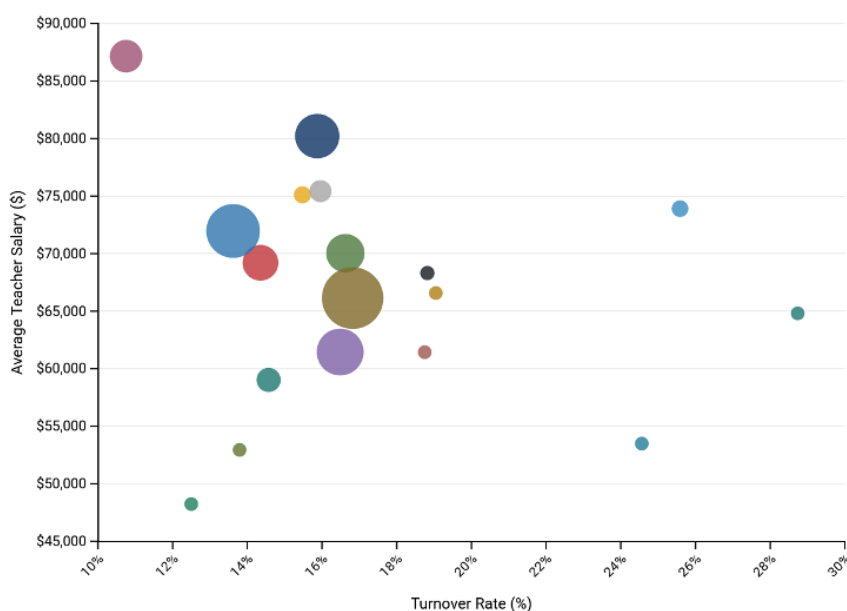
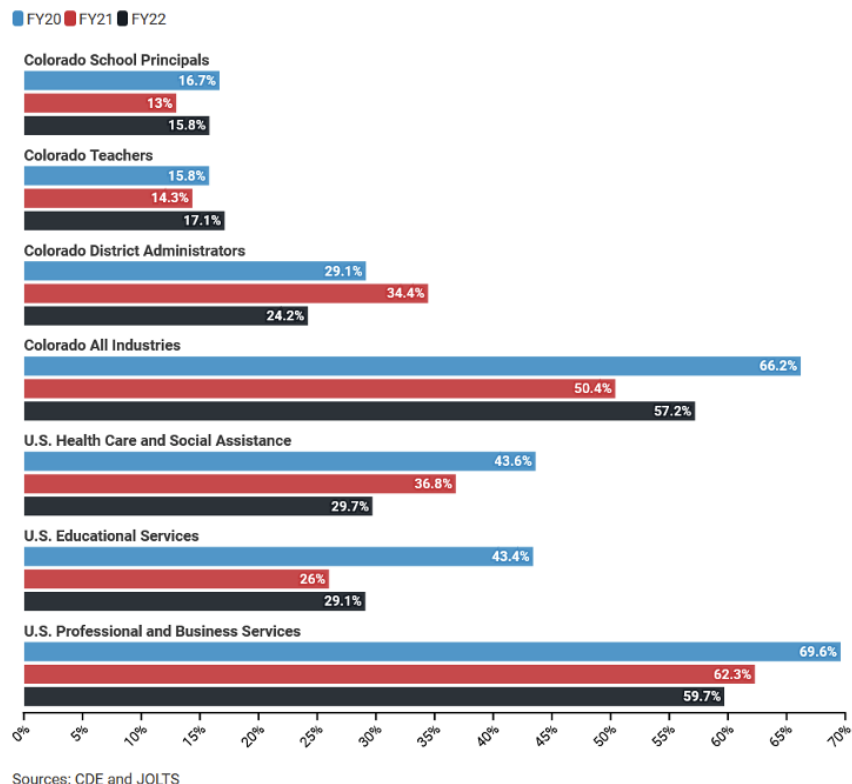


Figure 17: Average teacher salaries and turnover rate in the metro region



As the scatter plot in **Figure 17** illustrates, teacher turnover in the metro region is closely correlated with average pay. In Boulder Valley, where the average salary is over \$87,000, teacher turnover was just 10.8%. In the semi-rural Clear Creek School District, where average pay is \$53,494, turnover was 24.6%.

Figure 18: Average education staff turnover rates compared to other industries



Educator turnover rates are low in Colorado compared to other industries and are a fraction of turnover rates for all industries. Teacher turnover rates, however, increased by 2.8 percentage points, from 14.3% to 17.1%, between 2021 and 2022.

Part 5: Student performance

Colorado’s graduation rate is measured by how many students enter the ninth grade and progress through the 12th grade—completing all academic requirements—in either four or six years. Colorado’s four- and six-year high school graduation rates have risen over time. However, it must be noted that these academic standards are not well-aligned to college readiness standards or workforce readiness standards.

- Though the statewide graduation rate has risen, there is still a rather large regional disparity between the best-and worst-performing regions.
- Regional graduation rates and instruction/support spending per pupil seem moderately, but not overwhelmingly, correlated.

Figure 19: Four- and six-year graduation rates in Colorado

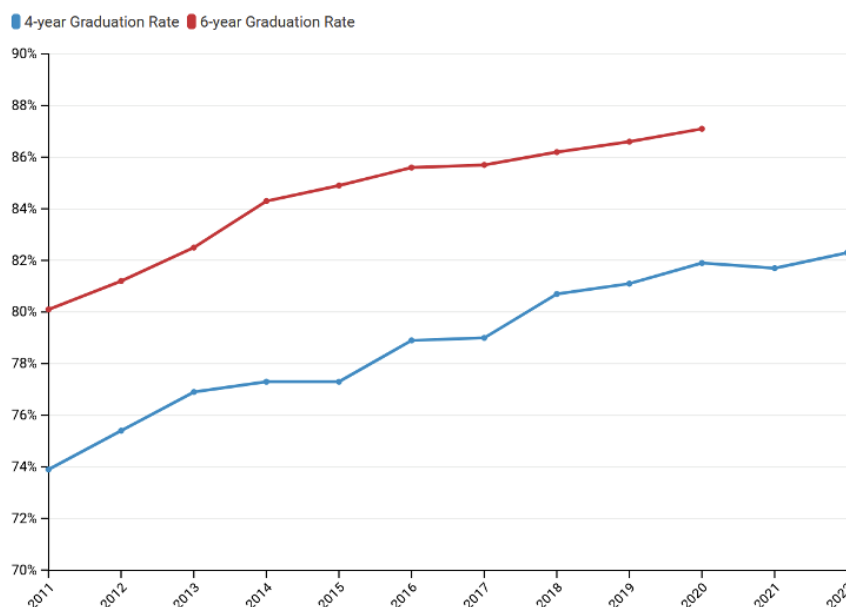


Figure 20: Four-year high school graduation rates by region (2022)

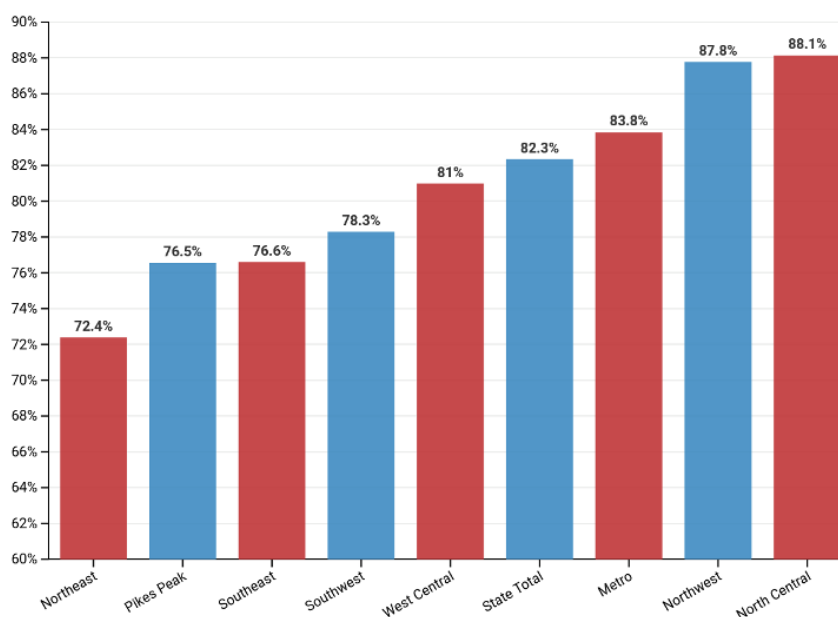


Figure 21 shows that on a statewide average, third grade math and reading proficiency scores remain below pre-pandemic levels. English scores were not tested in 2020 and math scores were not tested in 2020 or 2021. While math score recovered slightly in 2023, reading score dipped back downward. Having only 41% of third graders reading at grade-level bodes ill for the futures of 60% of the state's young students. Research shows that students not reading proficiently by the end of third grade face major obstacles to ever catching up. Math scores are similarly bleak, with just 40% of third graders performing at grade-level proficiency.

Achievement gaps between lower-income and more affluent students have widened since 2019, when the gap was 29.6 percentage points in math and 30.1 percentage points in English. In 2023 the gaps were 32.8 percentage points and 31 percentage points respectively. They also widened in both subjects between 2022 and 2023.

- If the last few years' test scores are indicative of pandemic learning loss, then it seems that it affected lower-income and more affluent students about the same at first; the lower-income students, though, seem to be recovering more slowly.

Figure 21: Third-grade reading and math proficiency rates

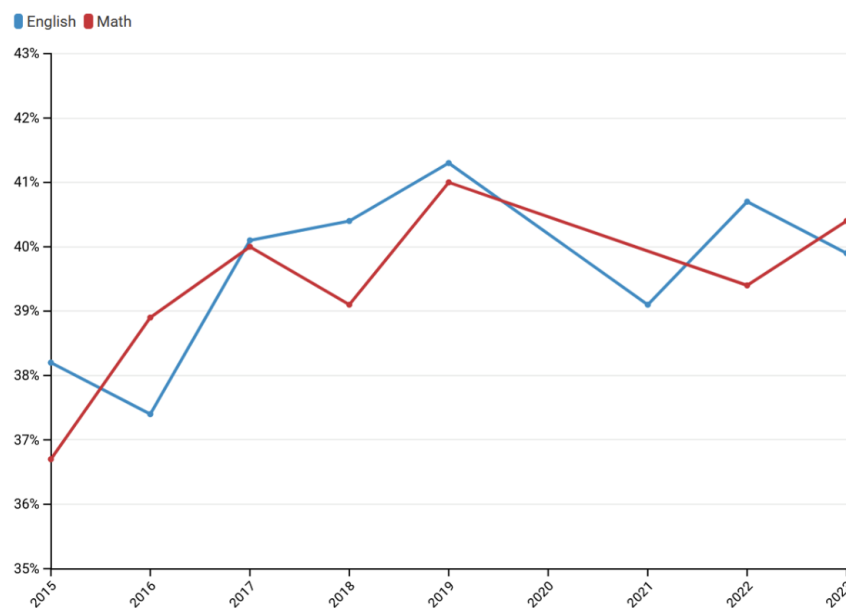
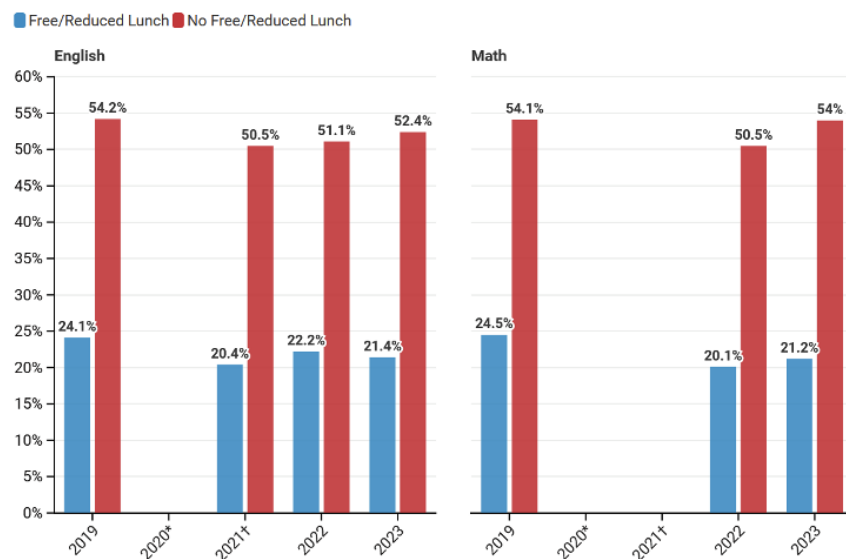


Figure 22: Third-grade reading and math proficiency rates by free or reduced-price lunch eligibility



*Students were not tested during the 2019–2020 school year

†3rd-grade students were not tested for mathematics proficiency during the 2020–2021 school year

Conclusion

The outcomes of Colorado's education system are critical for the success of thousands of graduating seniors every year. The recent trends indicate there has been a sizeable decline in total enrollment, while funding has continued to increase and student achievement outcomes appear not to have fully recovered from the impacts of the pandemic. The findings of this report point to broad system-wide trends that parents, educators, administrators and policy makers should recognize and work to resolve.