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STAFFING SURGES AND STUDENT OUTCOMES: RETHINKING UNIONS, RESOURCE ALLOCATION, AND SCHOOL CHOICE IN AMERICAN EDUCATION

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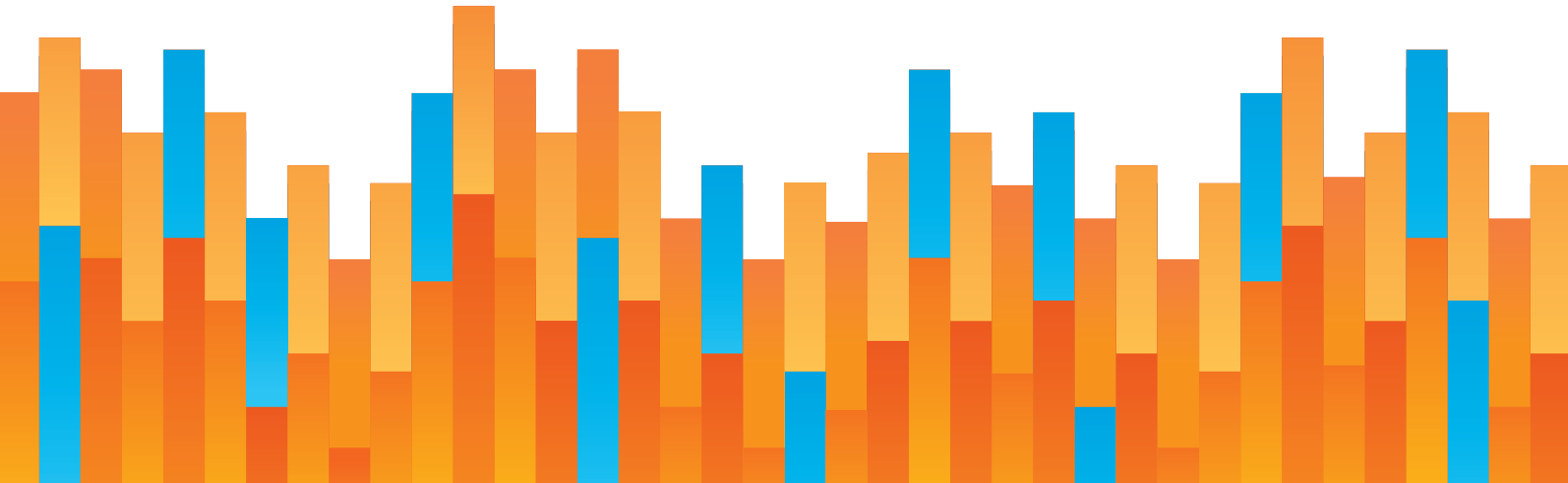

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EXECUTIVE SUMMARY

Despite declining student enrollment in many U.S. school districts, K-12 education spending and staffing—particularly in non-instructional roles—have grown substantially over the past two decades. This paper investigates the political and institutional drivers of this trend, focusing on the influence of teachers' unions in shaping staffing decisions, resisting reform, and reallocating resources in ways that often fail to improve student outcomes. Using longitudinal data from the National Center for Education Statistics (NCES), the study reviews evidence showing that staffing growth is concentrated in non-right-to-work states where union density is higher. These increases are further concentrated in non-teaching roles and are not associated with gains in student achievement. Empirical evidence suggests that strong union presence tends to prioritize employment protections and compensation structures that inhibit performance-based pay and flexibility in resource allocation. During the COVID-19 pandemic, unionized districts were also slower to return to in-person learning, exacerbating academic and mental health setbacks for students and parents alike. The paper also reviews reform efforts, such as performance pay and school choice programs, that can help improve educational outcomes by aligning incentives and improving the efficacy of spending. The evidence broadly suggests that the effectiveness of additional funding depends less on its amount than on its use. Systems with weak accountability or entrenched union influence are more likely to channel resources toward administrative expansion rather than classroom quality. Ultimately, improving educational outcomes requires aligning incentives, empowering parents with real choices, and ensuring transparency in how funds are spent. Reforms that prioritize instructional quality, flexible governance, and accountability, rather than mere staffing, will produce meaningful gains for students.

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PART 1

INTRODUCTION

Over the past two decades, K-12 education in the United States has seen a striking increase in staffing and public funding, despite enrollment declines in many districts.[1] This phenomenon has provoked growing concern among policymakers, parents, and researchers alike: Why, in districts that serve fewer students, are school systems simultaneously hiring additional non-instructional staff? While modest expansions in administrators or support personnel may reflect growing student needs or regulatory requirements, the scale of these staffing surges raises questions about whether limited educational resources are being optimally deployed to boost student achievement. Indeed, while expenditures and staff-to-student ratios have soared, academic outcomes—particularly in reading and math—have remained disappointingly flat.

A leading hypothesis for this apparent misalignment is the influence of teachers' unions on local budget decisions and staffing patterns. Historically, unions have sought higher wages and smaller class sizes, but a new wave of research suggests they may also lobby for

[1] Stoll, I. (2020). "Growth in Administrative Staff, Assistant Principals Far Outpaces Teacher Hiring." Education Next. https://www.educationnext.org/growth-administrative-staff-assistant-principals-far-outpaces-teacher-hiring/

Smith, A. G., Campbell, J., & Barnard, C. (2024). "Public education at a crossroads: A comprehensive look at K-12 resources and outcomes for all 50 states." Reason Foundation.

Aldeman, C. (2025). "Public Schools Added 121,000 Employees Last Year, Even as They Served 110,000 Fewer Students." The 74. https://www.the74million.org/article/public-schools-added-121000-employees-last-year-even-as-they-served-110000-fewer-students/

Miller, A. (2025). "The Surprising Effects of Enrollment Declines on School Funding." EdChoice. https://www.edchoice.org/engage/the-surprising-effects-of-enrollment-declines-on-school-funding/

broader personnel expansions that are unrelated, or weakly related, with driving educational outcomes. Drawing on data from the National Center for Education Statistics (NCES), my research finds that states without right-to-work laws (RTW)—where unions can require membership—are far more likely to exhibit robust staffing growth relative to states that weaken collective bargaining.[2] Unions are involved in other facets of district management, from school reopening decisions during the COVID-19 pandemic[3] to the distribution of any incremental funding that flows into schools.[4] While strong unions can serve teacher interests and potentially enhance job quality, critics argue they also impede certain reforms—such as performance-based pay—and reinforce a "one-size-fits-all" salary schedule that may crowd out more-effective uses of resources.

Recent debates on COVID-19 closures further illustrate how collective bargaining powers can shape schooling decisions in ways that are not always aligned with empirical evidence on academic and mental health trade-offs.

Against this backdrop, this study synthesizes findings on how union influence, evolving staffing patterns, and student performance intersect in the U.S. K-12 landscape. Building on the decades-long "staffing surge," it examines how expansions of non-teaching roles can persist even when student enrollments decline, highlighting both the organizational challenges and union-driven motivations that drive this growth. It also explores the empirical literature on reform strategies—spanning performance-pay policies, school choice options such as charters, vouchers, and education savings accounts (ESAs), and shifting accountability regimes—that aim to re-align resource allocation to improve student outcomes. Recent debates on COVID-19 closures further illustrate how collective

2 DeAngelis, Corey, and Christos A. Makridis. (2025). "Administrative Expansion in Public Schools: The Role of Unions in Resource Allocation and Student Performance." *Politics and Policy*, 53(6): e70093.

3 DeAngelis, C. A., & Makridis, C. A. (2021). "Are School Reopening Decisions Related to Union Influence?" *Social Science Quarterly*, 102(5), 2266–2284.

Hartney, M., and Finger, L. (2022). "Politics, Markets, and Pandemics: Public Education's Response to COVID-19." *Perspectives on Politics*. 2022;20(2):457-473.

4 Cook, J., Lavertu, S., & Miller, C. (2021). "Rent-seeking through collective bargaining: Teachers unions and education production." *Economics of Education Review*, 85, 102193.

bargaining powers can shape schooling decisions in ways that are not always aligned with empirical evidence on academic and mental health trade-offs. Ultimately, the evidence underscores that, while more funding may sometimes have slightly positive effects, the magnitude is small and depends much more heavily on the composition of spending, accountability structures, and degree of competition in the ecosystem.

PART 2

STAFFING TRENDS, UNION INFLUENCE, AND STUDENT PERFORMANCE

A voluminous body of work shows expansion in educational staffing-to-student ratios.[5] Even more puzzling is that districts with declining student enrollment between 1998-2019 saw a 25.5% increase in staff per 100 students (with a 76.7% increase in salaries and benefits per employee), in contrast to districts with growing enrollment seeing only a 14.4% increase (with a 72.4% increase in salaries and benefits per employee).[6] Has the increase in staff-to-student ratios been concentrated in specific areas, or has it been a more general increase across the board? And why has it grown so much, particularly in areas with falling enrollments?

Motivated by these patterns, this study uses the National Center for Education Statistics (NCES) data from 2006 to 2024 to further examine and disaggregate the rise in the staff-to-

[5] Stoll, I. (2020). "Growth in Administrative Staff, Assistant Principals Far Outpaces Teacher Hiring." Education Next. https://www.educationnext.org/growth-administrative-staff-assistant-principals-far-outpaces-teacher-hiring/

Aldeman, C. (2025). "Public Schools Added 121,000 Employees Last Year, Even as They Served 110,000 Fewer Students." The 74. https://www.the74million.org/article/public-schools-added-121000-employees-last-year-even-as-they-served-110000-fewer-students/

[6] Miller, A. (2025). "The Surprising Effects of Enrollment Declines on School Funding." EdChoice. https://www.edchoice.org/engage/the-surprising-effects-of-enrollment-declines-on-school-funding/

student ratios.[7] It finds that the bulk of the increase in these ratios takes place in states without right-to-work (RTW) laws relative to states with those laws (see Figure 1). RTW laws allow workers the option of not joining a union, which, not surprisingly, has been linked with declines in union density, as well as increases in employment.[8]

An interesting observation from Figure 1—aside from the increase concentrated in non-RTW states—is that the year-to-year changes are more volatile in non-RTW states too. One reason for the asymmetry may stem from the competitive effects of RTW laws on unions: if RTW laws cause unions to provide higher quality services to their members—since workers have the option not to join the union—then RTW laws could create other auxiliary benefits, including even the quality of tracking and reporting data to state and local authorities.[9] This would be consistent with empirical analysis on other sectors where more competition generates other benefits too.[10]

Teachers' unions are a powerful force in public education, often bargaining for higher staffing and member benefits. A growing body of evidence indicates that strong union presence can significantly shape how resources are allocated in schools. For example, DeAngelis and Makridis (2021) and Hartney and Finger (2022) showed that school reopening decisions were robustly associated with union influence,[11] and DeAngelis and Makridis (2022) showed that school districts that received greater funding were, in fact, more likely to delay reopening, arguably due to the power of local unions.[12] This will be explored further in Part 4.

7 DeAngelis, C. A., & Makridis, C. A. (2025). "Administrative Expansion in Public Schools: The Role of Unions in Resource Allocation and Student Performance." Working Paper, Educational Freedom Institute.

8 Hirsch, B. T. (1980). "The Determinants of Unionization: An Analysis of Interarea Differences." *Industrial and Labor Relations Review* 33:147–61.
Ellwood, D. T., and Fine, G. (1987). "The Impact of Right-to-Work Laws on Union Organizing." *Journal of Political Economy* 95:250–73.

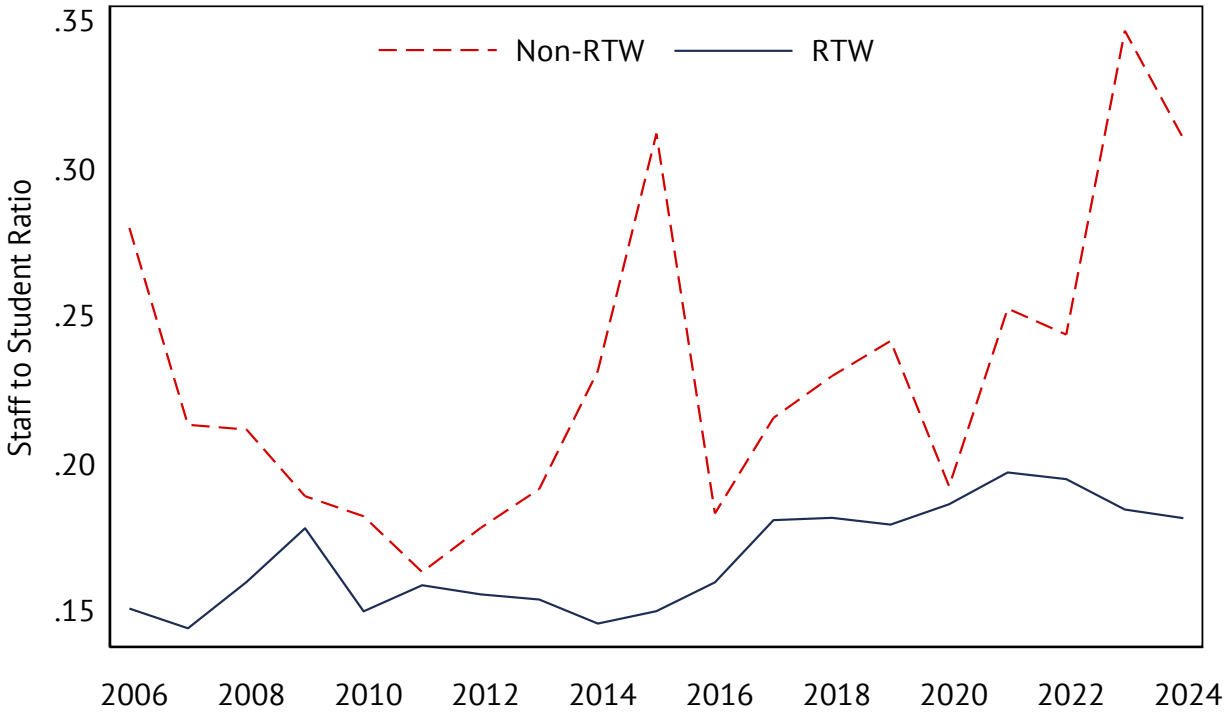
9 Makridis, C. A. (2018). "Do Right-to-Work Laws Work? Evidence from Individual Well-being and Economic Sentiment." *Journal of Law and Economics*, 62(2): 713-745.

10 Litina, A, Makridis, C. A., and Tsiachtsiras, G. (2021). "Do Product Market Reforms Raise Innovation? Evidence from Micro-data Across 12 Countries." *Technological Forecasting and Social Change*, 169.

11 DeAngelis, C. A., & Makridis, C. A. (2021). "Are School Reopening Decisions Related to Union Influence?" *Social Science Quarterly*, 102(5), 2266–2284.
Hartney, M., and Finger, L. (2022). "Politics, Markets, and Pandemics: Public Education's Response to COVID-19." *Perspectives on Politics*. 2022;20(2):457-473.

12 DeAngelis, C, and Makridis, C. A. (2022). "Are School Reopening Decisions Related to Funding? Evidence from Over 12,000 Districts During the Covid-19 Pandemic." *Journal of School Choice*, 16(3): 454-476.

FIGURE 1: STAFF-TO-STUDENT RATIOS IN RIGHT-TO-WORK (RTW) AND NON-RTW STATES



Source: NCES

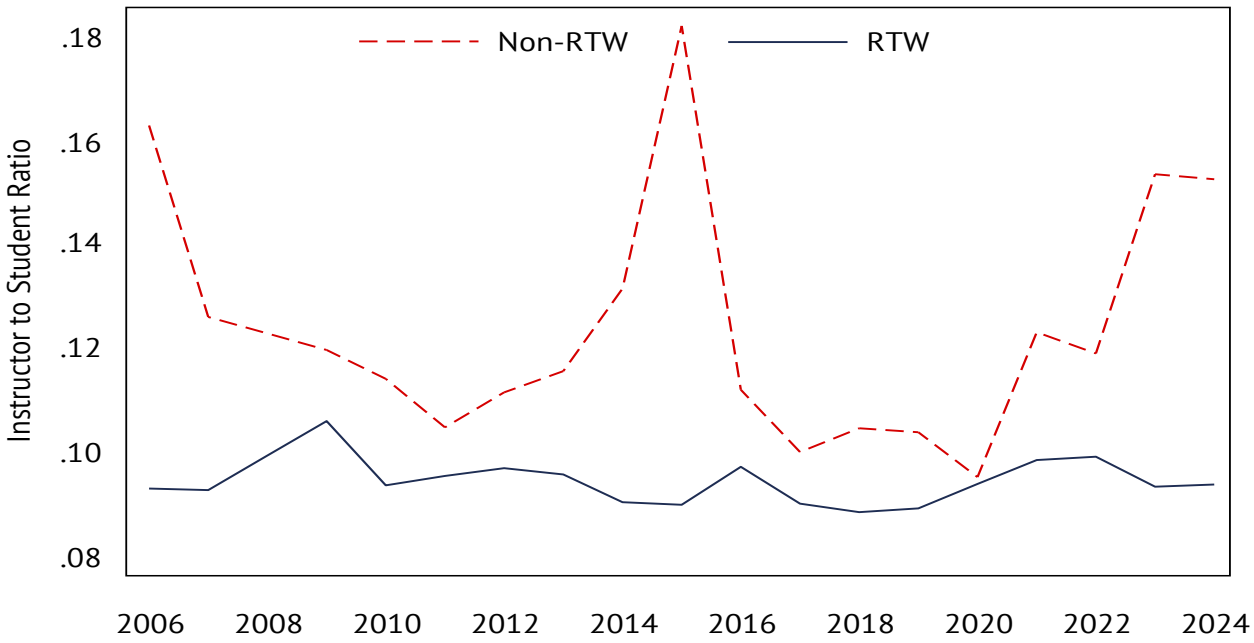
To understand the potential causal role of unions amid other confounding factors, DeAngelis and Makridis (2025) match district-level data on staff-to-student ratios with union density across states and a range of ZIP code-level demographic factors.[13] Failing to account for these factors could generate spurious correlations, i.e. states with greater union density may also have different student populations that require higher staff-to-student ratios. Controlling for a wide array of potentially confounding demographic characteristics, they find that higher teacher union density is associated with significantly higher staff-to-student ratios in public schools, driven largely by an expansion of non-teaching personnel (administrators and support staff) rather than just classroom teachers, although associations are robust for both. Furthermore, as in Figure 1, districts in states without RTW laws had far more personnel per student on average, indicating that unions successfully lobby for hiring additional staff. Conversely, in states with RTW laws—which weaken union

[13] DeAngelis, C. A., & Makridis, C. A. (2025). "Administrative Expansion in Public Schools: The Role of Unions in Resource Allocation and Student Performance." Working Paper, Educational Freedom Institute.

power and decrease union density—public school systems tend to have leaner staffing structures, with fewer administrators per student.

The increase in staff-to-student ratios appears to be driven by an increase in the number of support staff (Figure 3), rather than just instructional staff (Figure 2). Support staff include: guidance counselors, librarians and media specialists and support staff, local education agency staff and administrators, school administrators and support staff, student support staff, and other staff. Nevertheless, instructional staff, especially the rise of instructional aides, has risen more in absolute terms. If aides were counted as administrative staff—a reasonable classification–then the rise in administrative staff would account for the bulk of the increase.[14]

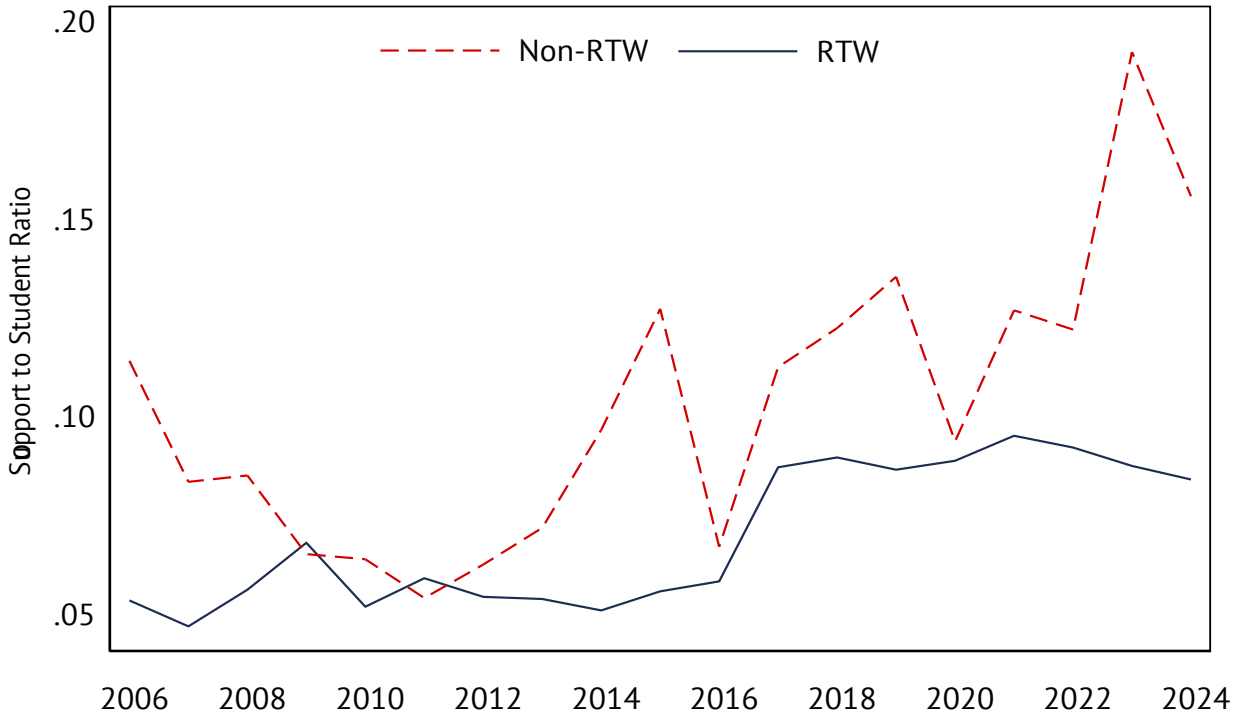
FIGURE 2: INSTRUCTIONAL-TO-STUDENT RATIOS IN RIGHT-TO-WORK (RTW) AND NON-RTW STATES



Source: NCES

[14] Smith, A. G., Campbell, J., & Barnard, C. (2024). "Public education at a crossroads: A comprehensive look at K-12 resources and outcomes for all 50 states." Reason Foundation.

FIGURE 3: SUPPORT-TO-STUDENT RATIOS IN RIGHT-TO-WORK (RTW) AND NON-RTW STATES



Source: NCES

This pattern is consistent with a large body of empirical evidence documenting substantial funding increases accompanied by a surge in staffing levels. Nationwide, inflation-adjusted K-12 revenue per student rose roughly 25% from 2002 to 2020, driven largely by rising employee benefit costs and hiring additional personnel. In that period, total school staff expanded by about 13%, roughly double the rate of student enrollment growth (~6%). Much of the hiring was outside the classroom: non-teaching staff grew around 20% (about three-quarters of all new positions), making non-instructional personnel the majority (52%) of the K-12 workforce by 2020. Correspondingly, a growing share of education spending is devoted to staff non-salary compensation—per-pupil spending on employee benefits jumped nearly 79% in real terms—even as average teacher salaries stayed essentially flat over this span.[15]

[15] Smith, A. G., Campbell, J., & Barnard, C. (2024). "Public education at a crossroads: A comprehensive look at K-12 resources and outcomes for all 50 states." Reason Foundation.

While public school staffing and spending have continued to grow—and that was true even before the COVID-19 pandemic—student achievement has remained stagnant. DeAngelis and Makridis (2025) assert that unions may contribute to this misalignment by prioritizing contracts that increase jobs and benefits for their members, even if the added resources do not translate into better instruction. Indeed, their study suggests union-supported resource allocation favors bureaucracy over the classroom, which can crowd out spending on teachers or other forms of instructional quality. They point out that in many districts families have limited ability to hold schools accountable for inefficient spending—parents face high barriers to "vote with their feet" by switching schools, especially in areas with few alternatives. This lack of competitive pressure may enable bureaucratic expansion without corresponding gains in student learning.

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Consistent with this, historical research finds that collective bargaining agreements often coincide with higher spending, but not higher student performance. For instance, school districts with more-restrictive union contracts spend more on administration and support staff (and sometimes teacher salaries), but show no improvement (or even declines) in test scores.[16] What is one potential explanation behind this phenomenon? The adoption of RTW laws is linked with improvements in reported well-being even among union members, meaning that RTW laws and greater competitive pressure on unions can generate other positive benefits.[17]

16 Strunk, K. O., & McEachin, A. (2011). "Accountability Under Constraint: The Relationship Between Collective Bargaining Agreements and Student Achievement in California." *Education Finance and Policy*, 6(3), 455–467. Cowen, J. M., & Strunk, K. O. (2015). "The impact of teachers' unions on educational outcomes: What we know and what we need to learn." *Economics of Education Review*, 48, 208–223.

17 Makridis, C. A. (2018). "Do Right-to-Work Laws Work? Evidence from Individual Well-being and Economic Sentiment." *Journal of Law and Economics*, 62(2): 713-745.

Peterson (2024) offers further evidence that the link between increased staffing and student outcomes is often tenuous, particularly in states where collective bargaining is mandatory.[18] In duty-to-bargain states (i.e. non-RTW), hiring additional school personnel (e.g., teachers and non-instructional staff) has no effect on math achievement. However, he argues that in non-bargaining states, hiring non-teacher personnel can yield gains in math performance. Where unions have less formal influence, districts may be more nimble in directing funds toward student-facing services that drive outcomes, rather than expanding central office bureaucracies or adding support staff in areas where student achievement gains are less likely to occur.

[18] Peterson, P. E. (2024). "Should Schools Hire More Staff or Pay Teachers More?" Education Next. https://www.educationnext.org/should-schools-hire-more-staff-or-pay-teachers-more/

PART 3

TEACHER INCENTIVES AND STUDENT OUTCOMES

3.1 UNIONIZATION

Empirical studies on the direct impact of teachers' unions on student outcomes have yielded mixed results, but many suggest neutral or negative effects. In a review of three decades of research, Cowen and Strunk (2015) conclude that the achievement effects of unions are "mostly mixed but suggestive that the results might tilt null to negative."[19] Several studies indicate that unionization or strong union contracts may inadvertently hinder academic progress. For example, Hoxby (1996) found that as teachers' unions gained power, schools saw increases in inputs (e.g. smaller classes or higher salaries), but lower productivity—translating into reduced student achievement (e.g. lower test scores) relative to non-union settings.[20] Similarly, Lott and Kenny (2013) observed that states with stronger teachers' unions had significantly lower student proficiency rates on standardized exams.[21]

19 Cowen, J. M., & Strunk, K. O. (2015). "The impact of teachers' unions on educational outcomes: What we know and what we need to learn." *Economics of Education Review*, 48, 208–223.

20 Hoxby, C. M. (1996). "How Teachers' Unionization Affects Education Production." *Quarterly Journal of Economics*, 111(3): 671-718.

21 Lott, J., & Kenny, L. W. (2013). "State Teacher Union Strength and Student Achievement." *Economics of Education Review*, 35, 93-103.

This could be driven, for instance, by unions focusing on other priorities, but data limitations make it difficult to pin down the mechanism.

The challenge with these studies, however, is that there could be many confounding effects. More recent research has applied quasi-experimental methods. Leveraging a regression discontinuity in Ohio between 1995 and 2019, Cook et al. (2021) find that a sudden influx of revenue can positively affect student outcomes, but only in school districts that exhibit less union pressure.[22] What can potentially reconcile these dual results? One easy explanation is that unions can reduce the efficacy of educational investments—not that they turn it to zero. For instance, DeAngelis and Makridis (2025) find that the expansion of staff-to-student ratios is associated with declines in student achievement, especially math scores.[23] That is intuitive if the rise in non-teaching staff simply creates more noise, or potential confusion, in schools.

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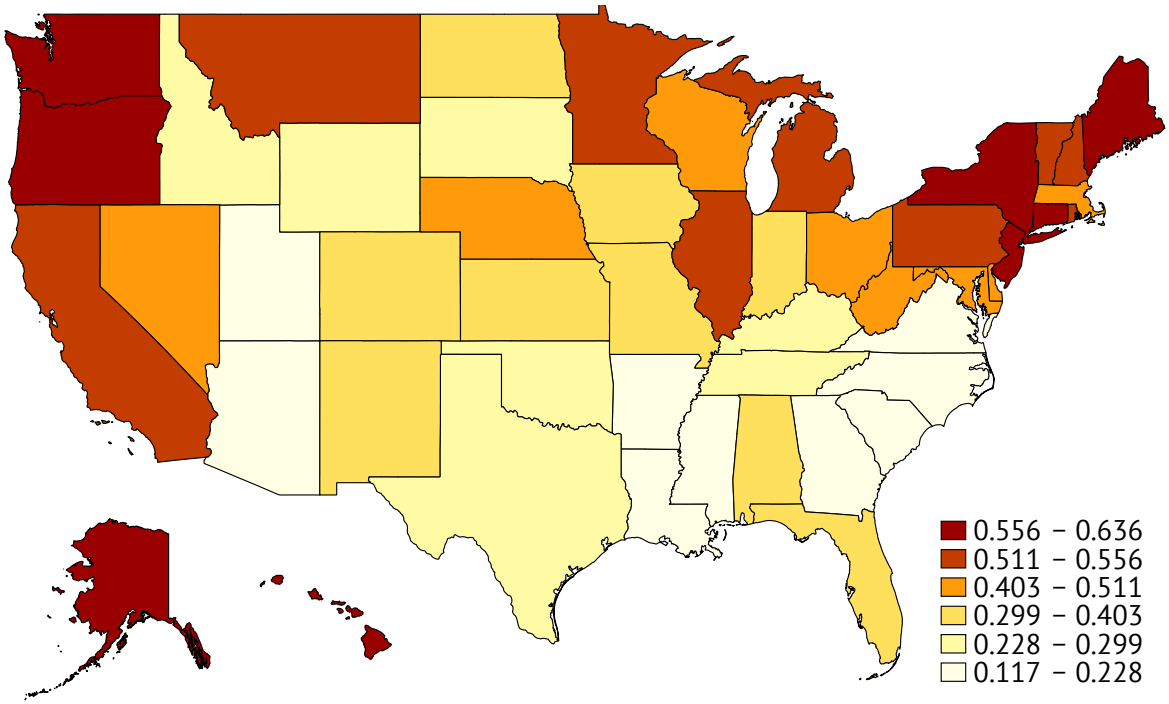
Panel A in Figure 4 shows the share of teachers in unions averaged across 2005 to 2024. The highest concentration is in Washington, California, New York, and more broadly the upper Northeast. Nevertheless, Panel B in Figure 4 shows that the growth in teacher union shares nationwide has been fairly minimal—it has declined overall, but there are a few states that have experienced an increase, like Massachusetts (1 percentage point [pp]), Pennsylvania (1.3pp), Washington (1.4pp), Kentucky (1.6pp), and Vermont (1.8pp). The states with greater growth in union density are also more likely to see more growth in educational expenditures, as well as lower efficacy of their educational expenditures. For example, additional diagnostics suggest that increases in staff-to-student ratios have more of a negative effect in non-RTW states.

[22] Cook, J., Lavertu, S., & Miller, C. (2021)." Rent-seeking through collective bargaining: Teachers unions and education production." *Economics of Education Review*, 85, 102193.

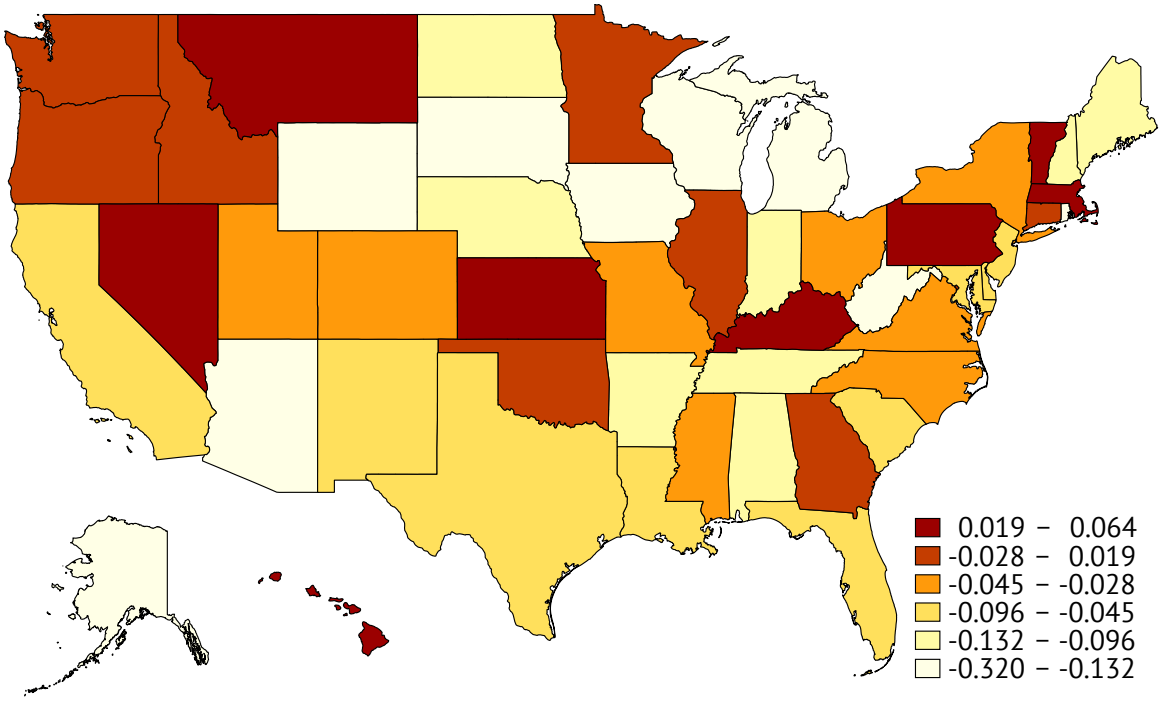
[23] DeAngelis, C. A., & Makridis, C. A. (2025). "Administrative Expansion in Public Schools: The Role of Unions in Resource Allocation and Student Performance." Working Paper, Educational Freedom Institute.

FIGURE 4: TEACHER UNION DENSITY SHARES AND GROWTH RATES

Panel A: Teacher Union Share (2005-2024)



Panel B: Teacher Union Growth (2005-2024)



Source: NCES

What does the literature say about the political economy of unions and the resulting educational outcomes? Moe (2011) theorizes that union contracts often protect underperforming teachers and resist accountability measures, which can hamper school effectiveness.[24] Quantitative studies in California found that districts bound by more restrictive union agreements showed no gains or slight losses in student performance compared to districts with flexible contracts.[25] Some of the most striking evidence comes from policy changes and natural experiments. Baron (2018), examining Wisconsin's Act 10 from 2011 that limited public sector collective bargaining, estimated that prior to the reform, union influence was depressing student test scores—his analysis suggests average test scores were about 20% lower in Wisconsin due to union effects, an outcome that improved after Act 10 weakened union control.[26] In another study, Lovenheim and Willén (2019) found that long-term exposure to collective bargaining laws had a negative impact on students' future earnings and employment.[27] They showed that male students who spent all 12 years of schooling under laws that strongly protected unions earned nearly 4% less annually in adulthood, with slightly reduced hours worked, compared to similar students in non-unionized environments. This suggests that union-related policies during schooling can have lasting detrimental effects on human capital development. Lovenheim (2009) found null results using an alternative identification strategy that compared results from close elections.[28] Likewise, an international study by Jaume and Willén (2019) on teacher strikes in Argentina (which occur more frequently with strong unions) found that exposure to strikes led to significantly lower future earnings for students (about −3.2% for males and −1.9% for females).[29]

It is important to note, however, that not all findings are negative. A few studies document neutral or even positive effects of unions under certain conditions. For instance, Matsudaira and Patterson (2017) found that unionization in California's charter schools (a context

[24] Moe, T. M. (2011). "Special Interest: Teachers Unions and America's Public Schools." Washington, D.C.: Brookings Institution Press.

[25] Strunk, K. O., & McEachin, A. (2011). "Accountability Under Constraint: The Relationship Between Collective Bargaining Agreements and Student Achievement in California." *Education Finance and Policy*, 6(3), 455–467.

[26] Baron, E. J. (2018). "The effect of teachers' unions on student achievement in the short run: Evidence from Wisconsin's Act 10." *Economics of Education Review*, 67, 40–57.

[27] Lovenheim, M. F., & Willén, A. (2019). "The Long-Run Effects of Teacher Collective Bargaining." *American Economic Journal: Economic Policy*, 11(3), 292–324.

[28] Lovenheim, M. F. (2009). "The effect of teachers' unions on education production: Evidence from union election certifications in three Midwestern states." *Journal of Labor Economics*, 27(4), 525–587.

[29] Jaume, D., & Willén, A. (2019). "The Long-run Effects of Teacher Strikes: Evidence from Argentina." *Journal of Labor Economics*, 37(4), 1097–1139.

where teachers typically lack civil service protections) was associated with a substantial increase in math achievement (around 17%) with no change in reading.[30] Another analysis by Han and Maloney (2019) reported some improvements in student test scores associated with union presence, suggesting that effective union-school collaboration or improved teacher morale could benefit outcomes in specific cases.[31] These exceptions imply that union influence is not strictly always harmful; the impact may depend on how union policies interact with local context, the quality of school leadership, and whether additional resources are channeled into instructional improvement versus bureaucracy. On balance, though, the preponderance of rigorous evidence—especially from broad policy changes—suggests that strong teachers' unions often prioritize member interests (job security, higher staffing) and do not lead to better learning for students.[32]

Another analysis by Han and Maloney (2019) reported some improvements in student test scores associated with union presence, suggesting that effective union-school collaboration or improved teacher morale could benefit outcomes in specific cases.

3.2 PERFORMANCE PAY

A contrasting reform strategy has been to tie teacher compensation to performance indicators. Teacher performance pay programs offer financial incentives (bonuses or salary increases) to educators based on measures like their students' test score gains or evaluated teaching quality. The goal is to sharpen teachers' focus on improving student outcomes by directly rewarding effectiveness in the classroom. A substantial body of research now

30 Matsudaira, J. D., & Patterson, R. W. (2017). "Teachers' unions and school performance: Evidence from California charter schools." *Economics of Education Review*, 61, 35–50.

31 Han, E. S., & Maloney, T. N. (2021). "Teacher unionization and student academic performance: Looking beyond collective bargaining." *Labor Studies Journal*, 46(1), 43–74.

32 Moe, T. M. (2011). "Special Interest: Teachers Unions and America's Public Schools." Washington, D.C.: Brookings Institution Press. Cowen, J. M., & Strunk, K. O. (2015). "The impact of teachers' unions on educational outcomes: What we know and what we need to learn." *Economics of Education Review*, 48, 208–223.

documents the effects of such performance-based pay initiatives, yielding mixed but instructive results.

Empirical studies show that well-designed pay-for-performance schemes can improve teacher effectiveness and student achievement. In Washington, D.C., for example, the IMPACT system introduced high-powered individual incentives: Low-performing teachers faced dismissal if they did not improve, while high performers earned large bonuses. The result was a higher exit rate of ineffective teachers and significant gains in the performance of those who remained on the order of +0.27 standard deviations (sd) in teacher quality.[33] Top-rated teachers responded to bonuses with further improvements (~0.24 sd). A multi-district federal pilot (the Teacher Incentive Fund) also found that offering meaningful bonuses led to small but positive gains in students' math and reading achievement over four years.[34]

Empirical studies show that well-designed pay-for-performance schemes can improve teacher effectiveness and student achievement.

More recent evidence comes from the Dallas Independent School District (ISD), which put in place the Teacher Excellence Initiative, linking educator pay to a rigorous evaluation of teaching effectiveness. Dallas ISD also found significant achievement gains after the reform .[35] Over four years, Dallas students' math scores improved by roughly 0.2 sd relative to similar Texas districts without such incentives, and smaller, but still significant gains in reading. They attribute 15% of the math score improvement to replacing less-effective teachers with higher-performing ones (through turnover), and the rest to incentive-driven performance gains among existing staff. In a complementary policy, Dallas's "Accelerating Campus Excellence" (ACE) initiative offered high-performing teachers up to $10,000

33 Dee, T. S., & Wyckoff, J. (2015). "Incentives, selection, and teacher performance: Evidence from IMPACT." *Journal of Policy Analysis and Management*, 34(2), 267–297.

34 Chiang, H., Speroni, C., Herrmann, M., Hallgren, K., Burkander, P., & Wellington, A. (2017). "Evaluation of the Teacher Incentive Fund: Final report on implementation and impacts of pay-for-performance across four years (NCEE 2018-4004)." Washington, D.C.: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

35 Hanushek, E. A. (2003). "The failure of input-based schooling policies." *The Economic Journal*, 113(485).

bonuses to work in the lowest-performing schools.[36] This yielded immediate and large test-score increases in those schools, bringing their achievement nearly to the district average within a couple of years. These findings from Dallas's reforms strengthen the case that well-designed incentive-based compensation can enhance teacher effectiveness and raise student achievement, contributing important empirical evidence to the broader debate on teacher performance pay.

International evidence echoes these findings. In Israel, a rank-order tournament that rewarded high school teachers for better student exam results produced significant score increases, driven by changes in teaching effort with no evidence of score tampering.[37]

Similarly, a large RCT in India showed that students in schools randomly assigned to offer teacher bonuses scored substantially higher in math and language after two years (+0.28σ and +0.16σ, respectively), even on more conceptual test items. Notably, the Indian program's impact extended to subjects that weren't tied to incentives (positive spillovers), and schools with individual teacher incentives outperformed those with group-based bonuses over time.[38] In Chile, where a nationwide school bonus program rewards the top ~20% of schools in a region, researchers also found a modest improvement in test scores, concentrated in the schools most likely to win the award.[39] These success cases suggest that performance pay—particularly with strong individual accountability—can motivate better teaching and raise student performance.

In Israel, a rank-order tournament that rewarded high school teachers for better student exam results produced significant score increases, driven by changes in teaching effort with no evidence of score tampering.

[36] Morgan, A. J., Nguyen, M., Hanushek, E. A., Ost, B., & Rivkin, S. G. (2023). "Attracting and retaining highly effective educators in hard-to-staff schools (NBER Working Paper No. 31051)." National Bureau of Economic Research.

[37] Lavy, V. (2009). "Performance pay and teachers' effort, productivity, and grading ethics." *American Economic Review*, 99(5), 1979–2011.

[38] Muralidharan, K., & Sundararaman, V. (2011). "Teacher performance pay: Experimental evidence from India." *Journal of Political Economy*, 119(1), 39–77.

[39] Contreras, D., & Rau, T. (2013). "Tournament incentives for teachers: Evidence from a scaled-up intervention in Chile." *Economic Development and Cultural Change*, 61(1), 219–246.

However, not all pay-for-performance trials have succeeded. A prominent three-year experiment in Nashville, Project on Incentives in Teaching (POINT) offered middle-school teachers bonuses up to $15,000 for higher test scores, yet found no significant difference in student achievement between incentivized and control classrooms.[40] Likewise, a randomized bonus program across more than 200 New York City public schools showed no gains in outcomes such as test scores, attendance, or graduation rates (Fryer, 2013). If anything, student performance slightly decreased in larger NYC schools under the program. Analysts suggest the New York plan's group-based incentives diluted individual accountability—teachers could free-ride on colleagues' efforts—thereby undermining its effectiveness.

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In Peru, a recent nationwide teacher incentive initiative (which awarded school-wide bonuses based on student exam rankings) yielded a precisely estimated null effect on student learning,[41] despite the sizable rewards on offer. Even where test scores did improve under incentives, the gains were sometimes narrowly focused. For example, Kenya's education ministry trial in the 2000s rewarded teachers for higher student exam scores and did raise performance on the high-stakes tests; it had no impact on learning as measured by unrelated exams not tied to the bonus. This pattern suggests that some teachers responded by teaching to the test—increasing drill and exam preparation—without broader improvements in instructional quality. Together, these high-profile disappointments underscore that performance pay's impact depends crucially on program design and teacher buy-in.

40 Springer, M. G., Ballou, D., Hamilton, L., Le, V., Lockwood, J. R., McCaffrey, D. F., Pepper, M. J., & Stecher, B. M. (2010). "Teacher pay for performance: Experimental evidence from the Project on Incentives in Teaching." Nashville, TN: National Center on Performance Incentives, Vanderbilt University.

41 Bellés-Obrero, C., & Lombardi, M. (2022). "Teacher performance pay and student learning: Evidence from a nationwide program in Peru." *Economic Development and Cultural Change*, 70(4), 1631–1669.

U.S. teachers' unions—notably the National Education Association (NEA) and American Federation of Teachers (AFT)—have consistently opposed merit pay or performance-based pay for educators. The NEA's official policy declares that the traditional single-salary schedule (pay based on teachers' experience and education level) is "the most transparent and equitable system" for teacher compensation.[42] In fact, NEA representatives have repeatedly voted to reject proposals for performance pay, reaffirming their commitment to the single-salary schedule.[43] A spokeswoman for the NEA stated plainly that the union "remains opposed to merit-based salary schedules," emphasizing that recent merit-pay plans rely on "subjective administrator evaluations, which we oppose." The AFT has taken a similar public stance. For example, leaders of AFT affiliates have condemned individual "merit rating" schemes for decades and strongly endorsed the single-salary pay structure as the only fair approach.[44]

[42] See p. 11: https://www.nea.org/sites/default/files/2022-08/nea-resolutions_2022-2023.pdf

[43] https://www.educationworld.com/a_issues/issues099.shtml

[44] https://www.aft.org/resolution/merit-rating

PART 4

SCHOOL REOPENING DECISIONS DURING COVID-19 AND UNION INFLUENCE

The COVID-19 pandemic brought new attention to the role of unions in education decision-making. In 2020–21, schools faced critical choices about whether to reopen for in-person instruction or remain remote, balancing public health concerns against students' educational and social needs. Research indicates that teachers' unions played a decisive role in these reopening decisions, sometimes outweighing local COVID conditions. DeAngelis and Makridis (2021) examined 835 public school districts and found that districts in areas with stronger teachers' unions were significantly less likely to reopen for in-person learning in fall 2020, even after controlling for local demographics and pandemic severity (infection rates, deaths).[45] In fact, districts in non-RTW states where union influence is greater were about 14 percentage points less likely to open with full in-person instruction, compared to those in RTW states, all else equal. Strikingly, measures of COVID-19 risk (such as local case rates and fatalities) were not statistically associated with schools' reopening decisions after accounting for union strength.

[45] DeAngelis, C. A., & Makridis, C. A. (2021). "Are School Reopening Decisions Related to Union Influence?" *Social Science Quarterly*, 102(5), 2266–2284.

This suggests that union preferences—for example, demands for stringent safety protocols or hesitation to return to classrooms—had more sway on reopening policies than the actual public health metrics did. Other contemporaneous analyses corroborated these findings: One study found that the share of Democratic voters in a county (a proxy for union and political leanings) predicted school reopening delays, whereas COVID case counts did not (Valant, 2020), and a review by Hartney and Finger (2022) likewise concluded that union power was the strongest predictor of remote-only instruction. The tendency of unions to advocate for remote instruction (or slower reopening) is understandable from a labor perspective—unions were seeking to protect their members' health and working conditions.[46] The American Federation of Teachers (AFT) and local unions in many cities set forth reopening conditions (e.g. improved ventilation, lower community spread thresholds, vaccine prioritization for staff) and in some cases threatened "safety strikes" if those conditions weren't met.

Subsequent studies have documented significant learning loss during the pandemic, especially in districts that stayed remote longer.

These pressures led large districts like Los Angeles, Chicago, and others to remain virtual for much of the 2020–21 school year. However, prolonged remote learning came at a cost. Subsequent studies have documented significant learning loss during the pandemic, especially in districts that stayed remote longer. For example, a report by the NWEA (Lewis et al., 2021) found students in 2021 were on average 5-10 percentile points behind in math relative to pre-pandemic cohorts with widened achievement gaps.[47] Districts that returned sooner to in-person instruction tended to see smaller declines. Thus, the union-driven closures, while aimed at safety, likely exacerbated educational setbacks. In this sense, parental frustration over extended school closures has been a driving force behind recent pushes for school choice expansion. Many families, dissatisfied with how public systems

[46] Hartney, M., and Finger, L. (2022). "Politics, Markets, and Pandemics: Public Education's Response to COVID-19." *Perspectives on Politics*. 2022;20(2):457-473.

[47] Lewis, K., Kuhfeld, M., Ruzek, E., & McEachin, A. (2021). "Learning during COVID-19: Reading and math achievement in the 2020–21 school year." NWEA. https://www.nwea.org/research/publication/learning-during-covid-19-reading-and-math-achievement-in-the-2020-2021-school-year/

handled the pandemic, began seeking alternative schooling options that could better serve their children's needs even during crises.

In some cases, this took the form of learning pods, microschools, homeschooling, or transferring to private schools that opened sooner. It is notable that private and charter schools, which generally have weaker or no unions, were more likely to reopen in-person in 2020–21, according to data from the American Enterprise Institute's Return to Learn Tracker. This contrast added fuel to arguments that giving parents the ability to choose schools (and thereby escape district bureaucratic constraints) can be crucial for continuity of education. It has prompted legislators in some states to reconsider the scope of teachers' unions in decision-making and to empower parental choice. For example, some states have introduced legislation to limit collective bargaining on certain issues during emergencies, while others have doubled down on expanding choice programs (as discussed later in this report). The pandemic served as a natural experiment illustrating that when families have alternatives (e.g. charter, private, or homeschool), they can respond to school policies they disagree with—and indeed, millions did so in 2020 and 2021 and, as the next section will examine, the effect remains persistent.

4.1 REMOTE INSTRUCTION AND PARENTAL WELL-BEING DURING THE PANDEMIC

Extended school closures and the shift to remote instruction not only affected students' learning; they also had profound effects on families. Parents suddenly had to juggle work and supervising their children's online education, often with minimal support. Using data from the Census Bureau's Household Pulse Survey and variation in school instructional modes across states, Makridis et al. (2025) found that increases in remote schooling were associated with significant declines in parents' well-being.[48] In states where a larger share of districts stayed remote, parents reported higher rates of anxiety, depression, worry, and loss of interest in daily activities. They find that a one percentage-point increase in the share of districts operating remotely corresponded with about a 0.1–0.2 pp increase in the probability that parents experienced frequent mental health distress (e.g. anxiety more than half the week).

These marginal effects can account for big shifts in aggregate outcomes. A move from 0% to 100% remote instruction (i.e. all schools closed) is predicted to increase parental

[48] Makridis, C. A., Piano, C., & DeAngelis, C. A. (2025). "Remote Instruction Adversely Impacts Parental Mental Health, Less Among Homeschoolers." *Scientific Reports*, 15, 5351.

anxiety/worry by around 10 percentage points. Crucially, the adverse effects of remote instruction on parents were not uniform across all families. Makridis et al. (2025) found a notable moderating factor: whether parents chose to homeschool.[49] Parents who were homeschooling their children during this period reported significantly less mental health impact from school closures. In other words, the stress and emotional toll of remote learning was concentrated among parents whose children were enrolled in public (or traditional) schools that went online.

> *In states where a larger share of districts stayed remote, parents reported higher rates of anxiety, depression, worry, and loss of interest in daily activities.*

Homeschooling families, by contrast, fared better; mental health declines around among these parents were about half as large as their counterparts, which is perhaps surprising given the time and energy that homeschooling takes. Crucially, these results are statistically identified from within-state changes in school closures among observationally equivalent parents, even income, controlling for the direct effect of homeschooling on mental health outcomes.

We also found that many families adapted by switching to homeschooling in response to school policies: Indeed, a 1 percentage point increase in a state's remote-instruction share was associated with a 2.2 percentage point increase in the likelihood of families homeschooling. This indicates a sizable elasticity—as districts stayed closed, a non-trivial number of parents opted to formally homeschool rather than rely on district-provided remote classes. National survey data confirm that homeschooling spiked during 2020. In August 2020, an estimated 13% of U.S. households with school-aged children reported homeschooling (up from roughly 5% pre-pandemic); the rate declined when schools reopened in fall 2020, then climbed again to over 11% by spring 2021 during renewed closures.

[49] Ibid.

By the 2021-22 school year, homeschooling levels remained somewhat elevated compared to pre-2020 norms. More recent research has also shown that these homeschooling rates have remained substantially elevated, relative to trend.[50] From a school choice perspective, these findings highlight an often-overlooked outcome: parental well-being. Education policies can affect not only student test scores but also the lives of families. The stress on parents when schools were closed was immense—contributing to what some termed a "pandemic parenting crisis" and that had labor market and community consequences.

One implication is that giving families the flexibility to choose or customize education (for instance, via education savings accounts or supportive homeschooling policies) might make the system more resilient and responsive to family needs. Parents who felt their children's needs were unmet by remote instruction often sought alternatives; policy frameworks that facilitate such exits (rather than trapping students in a closed school) can alleviate pressure on families. Furthermore, the mental health impact on parents indirectly affects children. Stressed, overwhelmed parents may struggle to support their children's learning. Thus, ensuring continuity of in-person learning or providing resources for parents during disruptions is critical.

Why does this matter? There is now a voluminous literature showing that prolonged remote instruction during the COVID-19 pandemic led to significant learning losses and other harms. For example, Duckworth et al. (2021) found that students in districts that stayed remote longer experienced substantially larger declines in math and English achievement compared to those in mostly in-person districts (with high-poverty areas hit the hardest).[51] Similarly, Jack et al. (2023) found, using panel data from over 2 million students in 10,000 U.S. school districts, that students in fully remote districts experienced significantly larger declines in math and English language arts scores, particularly in high-poverty and minority-concentrated districts.[52]

[50] Watson, A. (2024b). Homeschool participation: Post-pandemic persistence and growth trends. *Journal of School Choice*, 18(4).

[51] Duckworth, A. L. et al, "Students Attending School Remotely Suffer Socially, Emotionally, and Academically." *Educational Researcher* (2021)

[52] Jack, R., Halloran, C., Okun, J., & Oster, E. (2023). "Pandemic schooling mode and student test scores: Evidence from U.S. school districts." *American Economic Review: Insights*, 5(2), 219–234.

PART 5

FUNDING, SCHOOL CHOICE, AND STUDENT OUTCOMES

5.1 EDUCATIONAL EXPENDITURES

A growing body of evidence indicates that increased school funding can improve student outcomes, but the magnitude of these gains varies substantially across contexts. This should come as no surprise: More funding allocated to students should lead to at least slightly better outcomes, but how much and what moderates these effects?

Jackson and Mackevicius (2024) conduct a comprehensive meta-analysis, reporting that on average an extra $1,000 per pupil per year (for four years) raises test scores by only about 0.03 sds and increases college attendance by roughly 2–3 pp.[53] However, this modest mean effect masks wide heterogeneity: Some school spending initiatives yield much larger improvements, while others show negligible or no impact on achievement. Nevertheless, they argue that an estimated 76–88% of the variation in results across studies reflects differences in policy impact rather than random noise. Put differently, the variation in

[53] Jackson, C. K., & Mackevicius, C. L. (2024). "What impacts can we expect from school spending policy? Evidence from evaluations in the United States." *American Economic Journal: Applied Economics*, 16(1), 412–446.

estimated effects across studies reflects differences in the design of the policy, rather than just general imprecision.

One reason for the heterogeneity in outcomes, for instance, is that new funds generate smaller gains in already-advantaged student populations. Another reason could be the composition of activities that receive funding and/or the level of funds that have already been received. While there is some debate about the underlying source of heterogeneity, the authors nonetheless recognize that it is not simply the amount of money spent, but rather how the money is used, that determines its effectiveness.[54] When additional resources are channeled into high-impact educational investments—such as hiring teachers specifically for instruction and improving instructional quality[55]—student performance tends to improve more markedly. For example, analyses indicate that spending increases devoted to day-to-day operational needs (teacher salaries, instructional materials, etc.) often produce quicker and larger test score gains than equivalent investments in capital projects like new facilities.[56]

When additional resources are channeled into high-impact educational investments—such as hiring teachers specifically for instruction and improving instructional quality—student performance tends to improve more markedly.

Such targeted expenditures can translate into smaller class sizes, better learning materials, or specialized support programs, all of which directly benefit the classroom.[57] In contrast, when new funding is absorbed by bureaucratic overhead or compliance requirements—which are often done because these expenses are more visible and/or help reduce

54 McGee, J. B. (2023). "Yes, money matters, but the details can make all the difference." *Journal of Policy Analysis and Management*, 42(4), 1125–1132.

55 Dee, T. S. (2005). "Expense preference and student achievement in school districts." *Eastern Economic Journal*, 31(1), 23–44.

56 OECD (2022). "Value for money in school education: Smart investments, quality outcomes, equal opportunities." OECD Publishing.

57 Biasi, B., Lafortune, J., & Schönholzer, D. (2025). "What works and for whom? Effectiveness and efficiency of school capital investments across the U.S." *Quarterly Journal of Economics*.

liability—that do not directly enhance classroom teaching, the benefits for students can be minimal.[58] This pattern aligns with the view that purely input-driven reforms will fall short if they fail to change the educational experience or incentives within schools. Hanushek (2003) observed that decades of simply "concentrating on inputs" in schooling yielded "little in the way of general improvement in student achievement."[59] These suggest that the composition of spending—where resources are allocated—often matters more for student outcomes than the raw funding level itself. That is not to say that smaller class sizes always work—they do not[60]—or that funding support services never works, but rather a broader recognition that top-down policies often fail and the best decisions are generally made closest to the locus of the action—at the school-level.[61]

Beyond the vast treatment effect heterogeneity of expanding school funding, there are still many concerns associated with the meta-analysis by Jackson and Mackevicius (2024) that must be made transparent and a caveat to their broad qualitative result.[62] Greene (2023), for instance, points out that the sample of studies included in their meta-analysis has varied significantly over the four iterations of their study before it eventually reached publication. In prior iterations, for instance, they found a null effect of funding on student outcomes.[63] Similarly, McGee (2023) points out potential endogeneity problems related to the context of sources of variation that are routinely leveraged in the studies cited by

58 Martorell, P., Strange, K., and McFarlin, I. (2016). "Investing in schools: capital spending, facility conditions, and student achievement." *Journal of Public Economics*, 140: 13-29.

59 Hanushek, E. A. (2003). "The failure of input-based schooling policies." *The Economic Journal*, 113(485).

60 Barshay, J. (2018). "Despite popularity with parents and teachers, review of research finds small benefits to small classes." Hechinger Report. https://hechingerreport.org/despite-popularity-with-parents-and-teachers-review-of-research-finds-small-benefits-to-small-classes

61 Hanushek (2003) reviews decades of U.S. and cross-national evidence and finds that simply increasing traditional inputs (e.g., smaller classes, higher teacher credentials, or higher per-pupil spending) has produced few systematic gains in pupil achievement. Rather, teacher effectiveness varies dramatically and that input measures explain little of that variation. Accordingly, he argues that reforms should focus on performance-based incentives (e.g., merit pay, school choice, performance contracts) rather than uniform input mandates. While this critique of input-based policy highlights the limits of centralised spending rules, the paper does not claim that resource increases can never be effective; instead, their impact depends on how funds interact with incentives and accountability at the school level. More research is required to understand the role that the locus of decision-making plays.

62 Jackson, C. K., & Mackevicius, C. L. (2024). "What impacts can we expect from school spending policy? Evidence from evaluations in the United States." *American Economic Journal: Applied Economics*, 16(1), 412–446.

63 Greene, J. (2023). "*New Yorkers for Students' Educational Rights, et al. v. The State of New York*: Expert Report of Jay P. Greene, PhD." https://www.heritage.org/sites/default/files/2023-09/Greene%20NY%20Expert%20Report_0.pdf

Jackson and Mackevicius (2024).[64] While it is beyond the scope of this report to survey this literature, I leave it to readers to explore at their discretion.

5.2 SCHOOL CHOICE

The policy question, therefore, becomes a matter of not only introducing the right interventions for reform, but also creating an ecosystem where competition exists and each individual school has incentives to optimize and efficiently allocate their resources. To be clear, that would require further decentralizing decision-making from the school district to the individual schools within the district, which may not be easy, but provides better incentives. This is especially timely given recent reforms with the Department of Education where federal funding has been reduced and more autonomy may be returned to the states to decide how resources are allocated. As a result, the concept of school choice, which encompasses policies that enable students to attend the school of their choosing, rather than an assigned public school, becomes front and center as a mechanism for strengthening incentives since the school must work for their revenues, rather than receive them by fiat regardless of their quality and performance.[65]

> *… the concept of school choice, which encompasses policies that enable students to attend the school of their choosing, rather than an assigned public school, becomes front and center as a mechanism for strengthening incentives…*

Major forms include charter schools (publicly funded but independently operated schools of choice), voucher programs (which provide public funding for students to attend private schools), tax-credit scholarship programs (indirect funding of private tuition through tax credits), and education savings accounts (ESAs), which give families a funded account to

64 McGee, J. B. (2023). "Yes, money matters, but the details can make all the difference." *Journal of Policy Analysis and Management*, 42(4), 1125–1132.

65 See Jabbar et al. (2022) for a detailed meta-analysis of the literature. They find robustly positive, although economically smaller, effects of school choice on competition.

spend on approved education expenses, including tutoring, homeschooling, or private school tuition.

Proponents argue that school choice improves outcomes by fostering competition (pressuring all schools to improve), better matching students with schools, and increasing parental satisfaction and involvement. Opponents raise concerns about diverting funds from public schools and inconsistent quality in the choice sector. Over the past two decades, a substantial literature has evaluated the academic outcomes of school choice.[66]

5.3 CHARTER SCHOOLS

Charter schools are publicly funded schools that operate under a charter (performance contract) that grants them autonomy from many regulations that govern district schools, in exchange for accountability for results. Most charter schools are non-union and have flexibility in staffing and budgeting, which can lead to different resource allocation (e.g. typically leaner administration and the ability to innovate in instruction). Overall, the performance of charter schools relative to traditional public schools (TPS) has been mixed but encouraging in urban areas.

A large-scale study by Stanford's CREDO (2015) examined charter school outcomes in 41 urban regions and found that, on average, urban charter students learned significantly more than their district school peers.[67] Specifically, urban charter students demonstrated higher annual growth in both math and reading, equivalent to roughly 40 extra days of learning in math and 28 extra days in reading per year compared to students in traditional public schools. These gains were especially pronounced for low-income Black and Hispanic students in urban charters, suggesting charters have been effective in closing achievement gaps in many cities. Charters in cities like New York, Boston, and Washington, D.C., outperform nearby district schools by a meaningful margin, though results vary by location. By contrast, their earlier national study from 2013 found charters produced similar learning gains to TPS, but may have been driven by differences in sample selection (i.e., fewer versus more urban schools).[68]

66 See Epple et al. (2017) for a detailed review of the literature.

67 CREDO (2015). Urban Charter School Study: Report on 41 Regions. Stanford, CA: Center for Research on Education Outcomes.

68 The CREDO National Charter School Study (2013) examined charter school performance across a broad sample, covering charter schools in 27 states (plus NYC), encompassing urban, suburban, and rural schools. In contrast, the Urban Charter Schools Report (2015) focused exclusively on 41 urban communities in 22 states, zeroing in on major city school districts. Put differently, the 2013 study

The improvement in the 2015 urban charter results indicates that charter quality has risen in many cities, or that weaker charters were closed while successful models (e.g., "No Excuses" college-prep charters) expanded. It is important to note the heterogeneity in charter school performance. Not all charter schools excel—CREDO (2015) observed that in some cities a majority of charters still underperform relative to TPS.[69] Charter quality is a "patchwork," with stellar success stories in some areas (e.g. Boston, Newark, Chicago charters have shown strong effects) and disappointing outcomes in others. As a result, charter schools are not a panacea—they are a mechanism for improving competition through choice, but the best outcomes for learners will likely take place through a combination of reforms.

Rigorous lottery-based evaluations provide additional (causal) evidence. For example, in Boston, where charter schools are oversubscribed and admit students via lottery, researchers found very large achievement gains for lottery winners who attended charters. Angrist et al. (2013) report that Boston charter attendance raised student scores by

provides a nationwide picture of charter performance, while the 2015 study isolates charter schools in urban areas (where student populations tend to be more disadvantaged and traditional districts often struggle). Both studies employed a similar quasi-experimental design using CREDO's "Virtual Control Record" (VCR) technique. Each charter school student was matched to a "virtual twin," which generates a statistically similar peer in a traditional public school based on prior test scores and demographics. By tracking the growth of charter students against these matched counterparts, the studies estimate the value-added effect of attending a charter school. This matching approach attempts to control for selection bias and approximate a causal inference, albeit without actual random assignment. Nonetheless, the matching method is not a standard propensity score match and may leave some unobserved differences–for example, parental motivation–uncontrolled. The two studies reported different performance outcomes, likely due to their differing samples. The 2013 national study found mixed results: on average, charter attendance yielded only a very small positive gain in reading (≈7 extra days of learning per year) and no significant difference in math compared to traditional public schools. In contrast, the 2015 urban study found substantially larger gains for charter school students in cities: roughly 40 additional days of learning in math and 28 additional days in reading per year, on average, versus their district-school peers. In effect size terms, these urban charter impacts were around 0.05 standard deviations in math and 0.04 in reading, whereas the national average effect in 2013 was near zero (math) to ~0.01 SD in reading. The stronger results in the 2015 study can be explained by its focus on urban schools. Urban charters often serve low-income and minority students who previously attended low-performing district schools. Thus, effective charter schools in cities have a greater opportunity to produce gains in achievement relative to the local alternative. CREDO's 2015 analysis found that the positive effects were "especially strong for students who are minority and in poverty," groups that make up a significant portion of urban enrollments. By contrast, the 2013 national sample included many charter schools in suburban or rural settings and states where charters were not outperforming (and in some cases underperforming) traditional schools. Those non-urban charters often did not show an advantage over district schools, which dragged down the nationwide average. As Dr. Margaret Raymond (CREDO's director) noted, the "good news" for charter school performance "seems to be concentrated in urban areas."

69 CREDO (2015). Urban Charter School Study: Report on 41 Regions. Stanford, CA: Center for Research on Education Outcomes.

approximately 0.25-0.4 standard deviations in math and 0.1-0.2 in reading per year—effect sizes on par with an extra year of learning in math for each year in the charter (a remarkably high impact).[70] Similar lottery studies in New York City by Dobbie and Fryer (2013) found that charter schools implementing a rigorous "No Excuses" model (extended instructional time, intensive tutoring, strict behavior norms) eliminated the Black-White achievement gap in test scores for their students.[71] These positive outcomes tend to be concentrated in urban, high-poverty settings; suburban or rural charters, or those with more "relaxed" pedagogies, often show smaller effects.

The consensus from research reviews (Epple, Romano, & Urquiola, 2017) is that charter schools on average perform about on par with traditional public schools, but with greater variation—and that the highest gains are seen among disadvantaged students in urban charter schools with strong curricula and management. Charter schools also generally yield high levels of parental satisfaction and student safety, according to survey-based studies (Wolf et al., 2017). One factor differentiating charter schools is the lack of extensive union regulation. With about 93% of charter teachers nationwide working without a union contract, charters can more readily reward high-performing teachers or remove low-performers, adjust staffing to student needs, and redirect resources towards classroom instruction rather than central administration.

… charters often have slightly larger class sizes, but spend more on instructional support like tutoring, and they face strong accountability (i.e., a charter that fails to produce results can be shut down by its authorizer).

This flexibility may contribute to their successes; for example, charters often have slightly larger class sizes, but spend more on instructional support like tutoring, and they face strong accountability (i.e., a charter that fails to produce results can be shut down by its

[70] Angrist, J. D., Pathak, P. A., & Walters, C. R. (2013). "Explaining Charter School Effectiveness." *American Economic Journal: Applied Economics,* 5(4), 1–27.

[71] Dobbie, W., & Fryer, R. G. (2013). "Getting Beneath the Veil of Effective Schools: Evidence from New York City." *American Economic Journal: Applied Economics*, 5(4), 28–60.

authorizer). However, resource levels can be a constraint—charters typically receive 28.4% less, or $3,814 per-pupil, funding on average than district schools in the same area, which can limit their capacity.[72] Even so, the fact that many charters achieve equal or better outcomes with less funding and fewer non-teaching staff highlights a potential efficiency advantage. Some analysts argue this is evidence of competition at work: charters must use funds efficiently to attract and retain families, whereas district schools in monopolistic settings might be more prone to spending money in ways that do not drive learner outcomes.

Although the charter sector is not perfect, it demonstrates that when given autonomy and held accountable, schools can innovate in ways that boost student achievement—particularly for students who have been ill-served by traditional public schools. The policy implication is that expanding high-quality charter schools (and ensuring low-performing ones are improved or closed) can be a tool for raising educational outcomes, especially in underserved communities.

5.4 EDUCATIONAL SAVINGS ACCOUNTS AND VOUCHERS

Another pillar of the school choice movement involves giving families public funding to access private education or other educational services. Voucher programs provide students with scholarships (usually funded by the state) to attend approved private schools. Education Savings Accounts (ESAs) take this a step further by depositing public funds into an account that parents can spend on a range of educational expenses—not only private school tuition, but also tutoring, online courses, homeschooling materials, special needs therapies, etc. Unlike charters, which remain part of the public system, vouchers and ESAs enable an exit from public schools into the private sector (or home education).

These programs directly introduce competition, as public schools risk losing students (and funding) if families choose alternatives. They also empower parents to select schools aligned with their preferences (academics, discipline, religious instruction, etc.). Evidence on academic outcomes from private school choice programs is mixed with a contrast between older studies (often positive or neutral) and some recent studies (showing worrisome negative effects on test scores). Shakeel et al. (2016) conducted a meta-analysis of 19 experimental studies of voucher programs (mostly randomized lotteries) across the

[72] Batdorff, Meagan, Larry Maloney, Jay F. May, Sheree T. Speakman, Patrick J. Wolf, & Albert Cheng (2014). "Charter School Funding: Inequity Expands." Fayetteville, AR: School Choice Demonstration Project, Department of Education Reform, University of Arkansas, April 2014.

U.S. and other countries.[73] They found overall positive impacts of private school vouchers on student test scores, especially in reading. The average effect was modest but statistically significant.

The federal D.C. Opportunity Scholarship Program (OSP) evaluation reported 21 pps higher graduation rates for students offered a voucher.[74] Chingos and Peterson (2015) found that a New York City voucher experiment led to a 6–7 pp increase in college enrollment for African American students (though no effect for other groups).[75] These positive findings, along with consistently higher parent satisfaction among voucher users (as nearly every study records), have been cited by proponents as evidence that private school choice benefits participating students and their families.

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However, more recent evaluations of statewide voucher programs have revealed some negative academic effects, particularly in the short run. The most prominent example is the Louisiana Scholarship Program (LSP), a statewide voucher initiated in 2012 for low-income students in low-performing public schools. Two separate research teams evaluating the LSP found that students who used a voucher to attend private schools scored substantially lower on state tests than their peers who stayed in public schools. In the first year, voucher users in Louisiana dropped roughly 0.4 standard deviations in math (and also fell in ELA), a very large decline equivalent to missing several months of learning. Even after four years,

73 Shakeel, M. D., Anderson, K. P., & Wolf, P. J. (2016). "The Participant Effects of Private School Vouchers across the Globe: A Meta-Analytic and Systematic Review." EDRE Working Paper No. 2016-07, Univ. of Arkansas.

74 Wolf, Patrick J., Brian Kisida, Babette Gutmann, Michael Puma, Nada Eissa, & Lou Rizzo (2013). "School Vouchers and Student Outcomes: Experimental Evidence from Washington, D.C." *Journal of Policy Analysis and Management*, 32(2), 246–270.

75 Chingos, M. M., & Peterson, P. E. (2015). "Experimentally Estimated Impacts of School Vouchers on College Enrollment and Degree Attainment." *Journal of Public Economics*, 122, 1–12.

voucher students had not fully caught up; Mills and Wolf (2019) reported that voucher students remained significantly behind in math (though reading differences faded).[76] Similarly, the statewide Indiana Choice Scholarship Program showed initial test score drops (~0.15 sd in math) for voucher users in their first few years in private school.[77] These studies are context-dependent and not nationally representative; identification approaches also vary.

> *… if poorly designed, voucher programs might allow students to enroll in private schools that are less effective (at least in tested subjects) than the public schools they left.*

Nevertheless, such results have raised alarms: If poorly designed, voucher programs might allow students to enroll in private schools that are less effective (at least in tested subjects) than the public schools they left. Possible explanations include: Participating private schools may have been of generally lower quality (some elite private schools chose not to accept vouchers), or they struggled to adjust to an influx of disadvantaged students; regulatory constraints on voucher-accepting schools might have unintentionally driven better schools away;[78] or differences in curriculum (e.g., private schools teaching different content) caused initially lower test alignment. These possibilities raise questions about omitted variables bias when conducting simple pre and post comparisons of learner outcomes.

Nonetheless, the negative test score effects in Louisiana and Indiana stand in contrast to prior positive or neutral findings from smaller programs. They suggest caution—expanding choice without ensuring a strong supply of quality schools could lead to students moving into worse environments academically. Beyond test scores, long-term outcomes and non-

[76] Mills, J. N., & Wolf, P. J. (2019). "Vouchers in the Bayou: The Effects of the Louisiana Scholarship Program on Student Achievement After Four Years." *Educational Evaluation and Policy Analysis*, 41(1), 127–142.

[77] The time horizon also matters. For example, after the early shock, Indiana voucher students later showed improvement in English/Language Arts, suggesting they caught up in some areas (Waddington & Berends, 2018).

[78] Carnoy, M. (2017). "School vouchers are not a proven strategy for improving student achievement." Washington, D.C.: Economic Policy Institute.

test outcomes provide another perspective. Research on vouchers and ESAs has examined high school graduation, college enrollment, civic outcomes, and parental satisfaction. The evidence here is more often positive or mixed-positive. For instance, Wolf et al. (2013) found the D.C. voucher increased high school graduation (91% of voucher users graduated vs 70% of controls). In Milwaukee's longstanding voucher program, researchers found higher rates of high school completion and college enrollment for voucher students who remained in private school through 12th grade, compared to public school students, although a sizable portion of voucher users returned to public schools before graduating. Similarly, research on Ohio's EdChoice voucher program found that voucher recipients were substantially more likely to enroll in college than comparable public school students (64% vs. 48%).[79] The difference was especially pronounced for four-year college enrollment (45% vs. 30% in favor of EdChoice students), and EdChoice participants were also considerably more likely to earn a bachelor's degree by early adulthood (23% vs. 15%). These positive effects were strongest for male and Black students, as well as for students from the lowest-income families and those with below-median prior test scores.

Such attrition complicates interpretation: Indeed, in Milwaukee around 20% of voucher students left their private school each year, and interestingly, those who left tended to see their test scores improve after returning to public schools. This suggests that at least some private schools were underperforming, and students voted with their feet. Nevertheless, there are good news stories too. Chingos and Kuehn (2017) found modest gains in college enrollment in Florida for students who used a tax-credit scholarship to attend private school.[80] Parental reports also consistently indicate that safety and satisfaction are higher in voucher schools. Parents often value factors beyond test scores—including religious instruction (for faith-based schools), school culture, and moral values.[81] Surveys of voucher families show strong preference for the private schools chosen, and waiting lists for vouchers in many states (before recent expansions) underscored the demand.

79 Chingos, M. M., Figlio, D. N., & Karbownik, K. (2025). "The effects of Ohio's EdChoice voucher program on college enrollment and graduation." Washington, D.C.: Urban Institute.

80 Chingos, M. M., & Kuehn, D. (2017). "The effects of statewide private school choice on college enrollment and graduation: Evidence from the Florida Tax Credit Scholarship Program." Washington, D.C.: Urban Institute.

81 Bedrick, J., & Burke, L. M. (2018, November 14). "Survey says: Parents want school choice." Education Next.

> *Parents often value factors beyond test scores—including religious instruction (for faith-based schools), school culture, and moral values.*

Some experts interpret the recent negative findings as a warning that there may "not enough effective private schools to go around" when vouchers are scaled up.[82] If a surge of new or marginal private schools emerge just to capture voucher funding (as was observed in states like Arizona after a universal ESA program launched), it could dilute average quality—some of these schools might later close due to mismanagement. Additionally, there is evidence that private schools respond to voucher availability by raising tuition (absorbing the voucher as a subsidy), which could limit affordability in the long term. Accountability provisions may matter, too: When policymakers required low-performing voucher schools to be removed from the program in Louisiana after a few years, the remaining schools improved their outcomes.[83] Yet too many regulations might deter good private schools from participating at all.[84] Thus, designing choice policies involves a balance—enough oversight to ensure quality, but not so much as to negate the freedoms that can make private schools effective or attractive.

5.5 EXPANSION OF ESAS AND POLICY IMPLICATIONS

Motivated by the pandemic and growing parental demand for flexibility, there has been a wave of new school choice legislation in recent years, particularly ESA programs, which allow funds to cover a variety of educational services. They can enable a more customized education (e.g., part-time classes, tutoring, and homeschool curricula funded by the account). As of 2023–2024, at least 10 states have adopted new universal or near-universal ESA programs, including Arizona (the first universal ESA, 2022), West Virginia, Iowa, Arkansas, Florida, and others. In 2023 alone, seven states enacted brand-new choice

82 Cowen, J. (2023). "Research on school vouchers suggests concerns ahead for education savings accounts." Brookings Institution.

83 Figlio, D. N., & Karbownik, K. (2016). "Evaluation of Ohio's EdChoice Scholarship Program: Selection, Competition, and Performance Effects." Thomas B. Fordham Institute, July 2016.

84 DeAngelis, Corey A., & Lindsey M. Burke (2019). "The Effects of Regulations on Private School Choice Program Participation: Experimental Evidence from California and New York." EDRE Working Paper No. 2019-07, Department of Education Reform, University of Arkansas.

programs and nine expanded existing ones. By July 2024, 18 states had ESA programs, up from just 4 states in 2019.

> *This represents a major shift in education funding philosophy: Rather than financing systems (schools), an increasing number of states are moving toward financing students directly.*

This represents a major shift in education funding philosophy: Rather than financing systems (schools), an increasing number of states are moving toward financing students directly. The policy rationale, amplified by COVID disruptions, is to give families an "exit option" and leverage competitive pressure for public schools to better serve students to avoid losing them. Unions and other opponents counter that widespread choice will drain public school resources and lead to stratification, but proponents respond that empowering families—especially low-income families—to access alternatives is a matter of equity and freedom, and they emphasize positive outcomes like higher graduation rates and parental satisfaction.

They also note that most studies find public schools tend to slightly improve when faced with competition from vouchers or charters (the "competitive effect"), rather than collapsing. For example, studies in Florida, Milwaukee, and D.C. observed that public schools in the vicinity of voucher or charter expansions showed small test score gains, presumably due to competitive pressures.[85] One challenge is ensuring quality control in an expanded choice marketplace. States implementing universal ESAs will need robust transparency and metrics so parents can make informed decisions and so that failing education providers can be identified.[86] Unlike public schools, private or micro-schools might not have to administer state exams, making it harder to track student progress. Some

[85] Figlio, D. N., & Rouse, C. E. (2006). "Do Accountability and Voucher Threats Improve Low-Performing Schools?" *Journal of Public Economics*, 90(1–2), 239–255. Hoxby, C. M. (2000). "Does competition among public schools benefit students and taxpayers?" *American Economic Review*, 90(5), 1209–1238.

[86] The mere presence of low test scores is not an automatic red flag of failure for a school. There are many reasons learners could be struggling unrelated to teacher performance, e.g. student composition can change and differ across areas. Chetty et al. (2014a,b) introduce an approach to measuring teacher value added, which exploits within-teacher variation to identify more aggregate effects. Moreover, there are other factors besides test scores that matter; standardized tests are inherently limited.

states require ESA participants to take a national norm-referenced test; others do not. Going forward, research will be crucial: Notably, there is not yet any empirical evaluation of ESA students' academic outcomes, as ESAs are too new.[87]

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Researchers are devising ways to study these programs using administrative data linkage, but it will take time to gauge their effects. In the interim, policymakers often look to the analogous voucher literature for guidance. If the voucher evidence teaches anything, it is that program design matters. These criteria, such as student eligibility and scholarship criteria, must inevitably be debated and scrutinized, but there is no doubt that they are required.

87 Roy, S., Schwartz, H., K., & Gable, A. (2024). "The Path Toward Evaluating the Impacts of Education Savings Accounts on Academic Achievement Outcomes." Santa Monica, CA: RAND Corporation, December 2024.

PART 6

CONCLUSION

The current landscape of American K-12 education is at an inflection point. Years of declining academic outcomes despite ever-growing investments have led reformers to question the status quo and experiment with empowering parents through school choice, like the recalibration of the Department of Education. The influence of teachers' unions on education policy and resource allocation has come under scrutiny, especially after the COVID-19 school closures.

This research finds that union dynamics and school choice are intertwined with student outcomes in complex ways. On one hand, strong unions tend to secure more staffing and resist certain reforms, which can inadvertently contribute to inefficiencies and stagnant performance. On the other hand, school choice mechanisms introduce competitive pressures that can catalyze improvements but must be implemented thoughtfully to avoid unintended harms (as some voucher studies warn). The evidence to date suggests several clear takeaways.

1. Unions' Influence Extends Beyond Teacher Salaries: A major finding is that teachers' unions have successfully lobbied for increased staffing—often in non-instructional roles—without clear evidence of academic gains. This pattern raises questions about how contracts and collective bargaining can shape spending priorities, potentially crowding out more direct investments in teaching quality.

2. Competitive Pressures Can Spur Improvement—But Are Not a Panacea: School choice programs (charters, vouchers, ESAs) may introduce beneficial competition, prompting nearby schools to become more efficient and student-focused. However, their impact nonetheless depends heavily on design and context.

3. Composition of Spending Matters More Than Its Size: Additional funding alone has a modest effect on student outcomes and there is significant heterogeneity in the effect of additional spending. While there is some evidence that directed funds towards student instruction and core infrastructure have greater returns, much remains to be learned. One stronger result, however, is that districts with high union influence or weak oversight may be more prone to inefficient allocations regardless of the type of spending.

4. Performance Pay Shows Potential but Demands Strong Design and Buy-In: Evidence suggests that individual, high-powered bonuses can boost teacher performance and student achievement, especially when tied to clear performance metrics. Yet group-based or ill-defined incentive structures often fail—and can even backfire—if teachers perceive them as unfair or easily "gamed."

5. Parental Empowerment Plays a Key Role in Crisis Response: During COVID-19 closures, parents able to choose alternatives—like private or charter schools, or homeschooling—could mitigate disruptions and stress. This clarifies the value of giving families more choice and putting competitive pressure on complacent systems to adapt.

6. Unions Can Serve Important Teacher Interests but May Resist Reforms: Some studies show negative union impacts on test scores and labor-market outcomes, yet others find neutral or localized positive results, suggesting union influence varies by context. Policy changes that limit collective bargaining or introduce new accountability structures have sometimes improved achievement, but may face political headwinds.

7. Transparency Is Key for Both Public and Private Options: School choice does not guarantee high performance unless robust mechanisms—such as transparency and data reporting—are in place for parents to make informed decisions, thereby unleashing competition across schools. Traditional public schools also benefit from

competition and oversight, ensuring that new funding or staffing expansions remain focused on raising student achievement rather than ballooning bureaucracies.

The ongoing reforms across states will provide new insights in the years to come. Policymakers would do well to heed the lessons from the research so far: align resources with student learning, hold all schools accountable for results, and trust parents as partners in education. By doing so, the U.S. can aspire to break out of its performance plateau and ensure that every child—regardless of ZIP code or background—has access to an excellent education.

Policymakers would do well to heed the lessons from the research so far: align resources with student learning, hold all schools accountable for results, and trust parents as partners in education.

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