PUBLIC POLICY INSTITUTE OF CALIFORNIA

District Spending of One-Time Funds for Educational Recovery

Technical Appendices

CONTENTS

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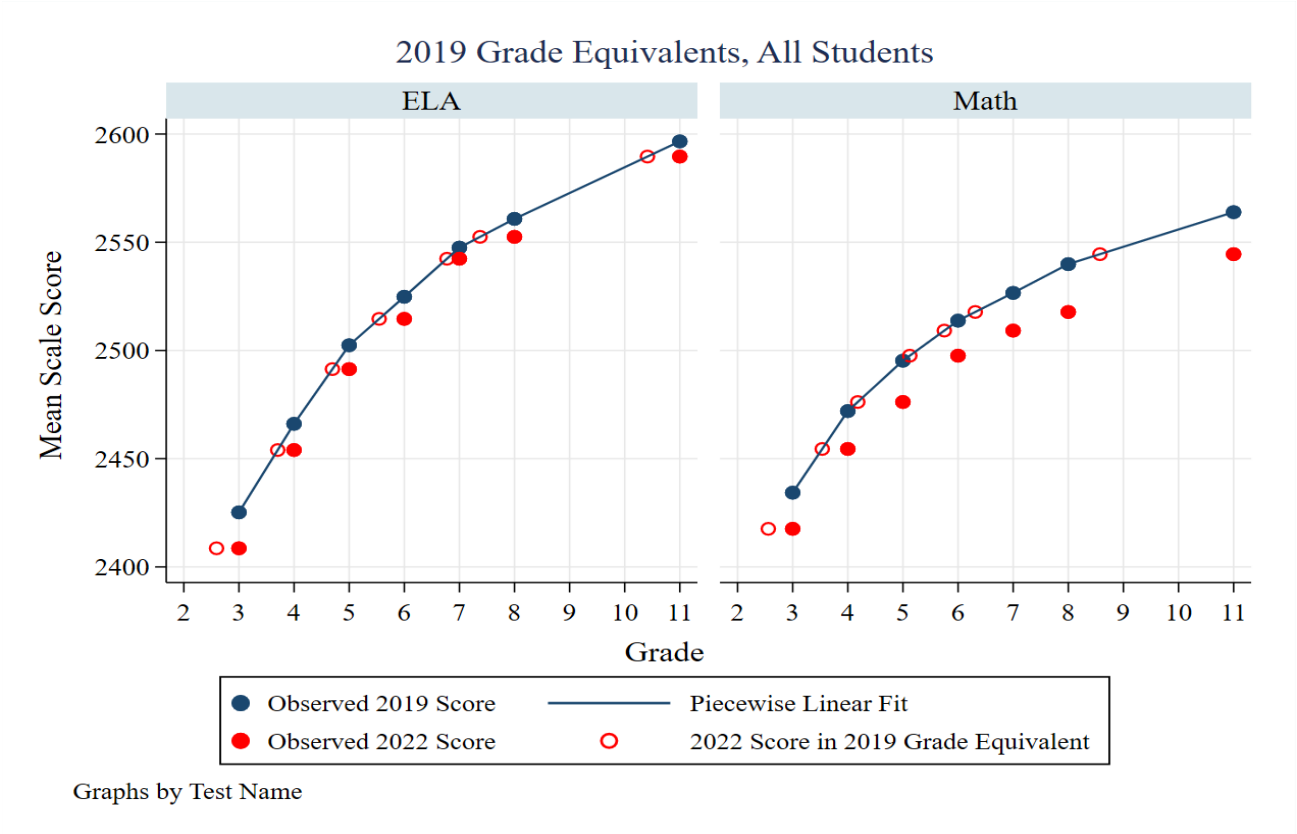
Appendix A. Test Score Data

We obtained measures of student achievement from the California Department of Education website. The main transformation we made was to estimate the grade level, or "grade equivalent", that students in a given grade in 2022 scored at in terms of 2019 achievement. We explain this below.

Learning Losses in 2019 Piecewise Linear Grade Equivalents

We take a conservative approach by ignoring the pre-COVID year-on-year growth in test scores in measuring learning loss. Instead, we measure learning loss by assuming that test scores in 2022 would have remained at 2019 levels in the absence of the pandemic. Learning losses are calculated in 2019 grade equivalents, which are based on a piecewise linear function of test scores on grade level in that year. Test scores from 2022 are projected onto this piecewise linear function. Figure A1 below illustrates this procedure for all students.

FIGURE A1
Diagram showing how 2019 grade equivalents were assigned to mean 2022 test scores by grade



SOURCE: Smarter Balanced Assessments, California Department of Education, 2022; authors' calculations.

The blue dots show mean scores for each grade in 2019. We predicted what test scores would have been partway through a grade using a linear interpolation between each grade. The red dots show mean scores

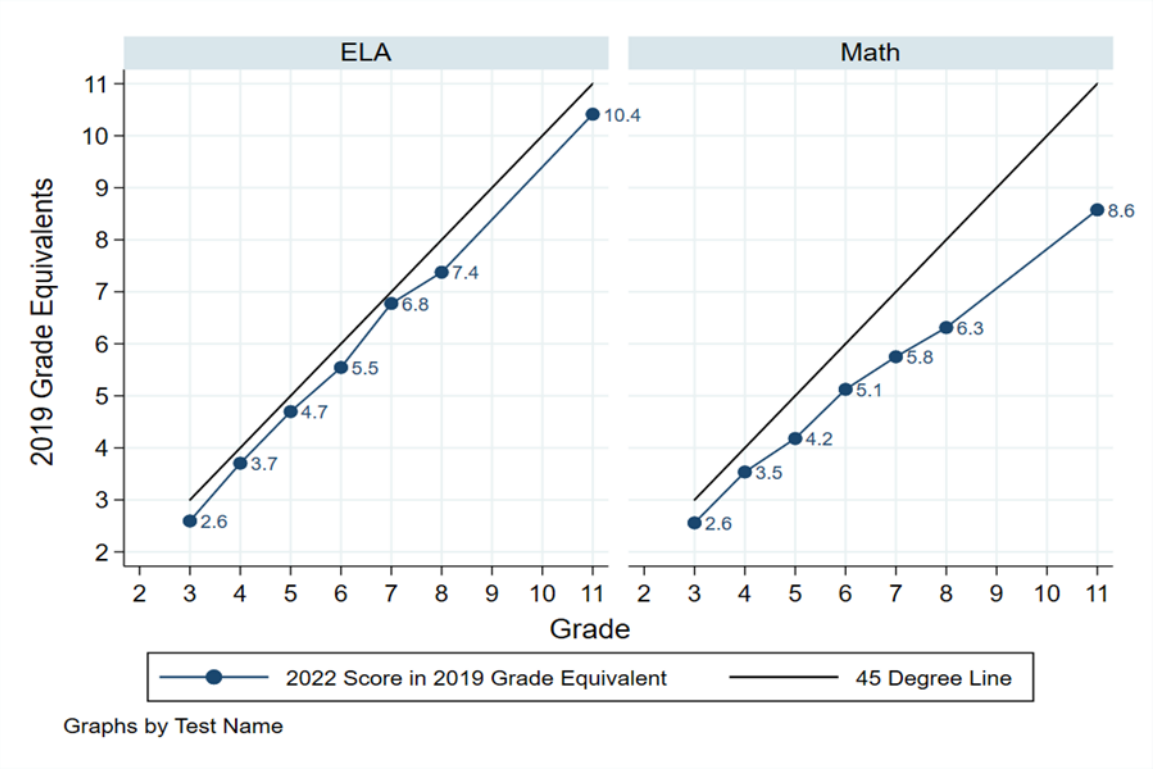
in 2022. To obtain the 2019 grade equivalent we move horizontally from each red dot to the blue line that represents the 2019 grade equivalents. The corresponding empty red dots show the 2019 grade equivalent.

As noted in the text, between grades 8 and 11 we must predict across three grades, meaning that in this range our grade equivalent mapping is a rougher approximation than for lower grades. Also, when we found 2022 grade 3 test scores falling below the 2019 grade 3 test scores, we had to extrapolate below grade 3. We did this simply by assuming that the incremental gains in test scores per year in grade 2 were the same as observed in grade 3. Again, in cases where a grade equivalent is below 3, we consider this to be a rougher approximation than the grade equivalents between grades 3 and 8.

Table 1 in the main report shows the resulting loss in grade equivalents between 2019 and 2022. The next three figures below illustrate those losses graphically. For each grade, the vertical distance between the 45 degree line and the grade equivalent line is proportional to the learning loss, measured in grade equivalents. The figures show that learning loss is bigger in the upper grades and for math relative to ELA.

FIGURE A2

In 2022 students fell behind the grade equivalent test scores observed in 2019, especially in math



SOURCE: Smarter Balanced Assessments, California Department of Education, 2022.

NOTES: 45-degree line represents one grade-level equivalent of learning per grade (in 2019). The blue dots depict actual test scores in 2021-22, in grade-level equivalents. See Appendix A for more detail.

Table 1 in the main text shows declines in grade equivalents for math. Table A1 below shows the corresponding data for ELA.

TABLE A1

Dramatic grade level declines in ELA observed in 2022

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
ALL	-0.41	-0.30	-0.30	-0.46	-0.22	-0.62	-0.59
Socioeconomically Disadvantaged (SED)	-0.54	-0.38	-0.36	-0.45	-0.26	-0.57	-0.59
Not SED	-0.30	-0.26	-0.30	-0.58	-0.28	-0.87	-0.72
Latino	-0.63	-0.64	-1.06	-1.16	-1.68	-2.24	-2.76
White	-0.26	-0.20	-0.25	-0.54	-0.24	-0.76	-0.48
Asian	-0.09	-0.08	-0.10	-0.17	0.14	0.03	0.29
Black	-0.48	-0.33	-0.29	-0.40	-0.23	-0.48	-0.74
Filipino	-0.11	-0.05	-0.08	-0.14	0.16	-0.19	0.10
Other	-0.34	-0.26	-0.28	-0.48	-0.29	-0.99	-0.26

SOURCES: Smarter Balanced Assessments, California Department of Education, 2022.

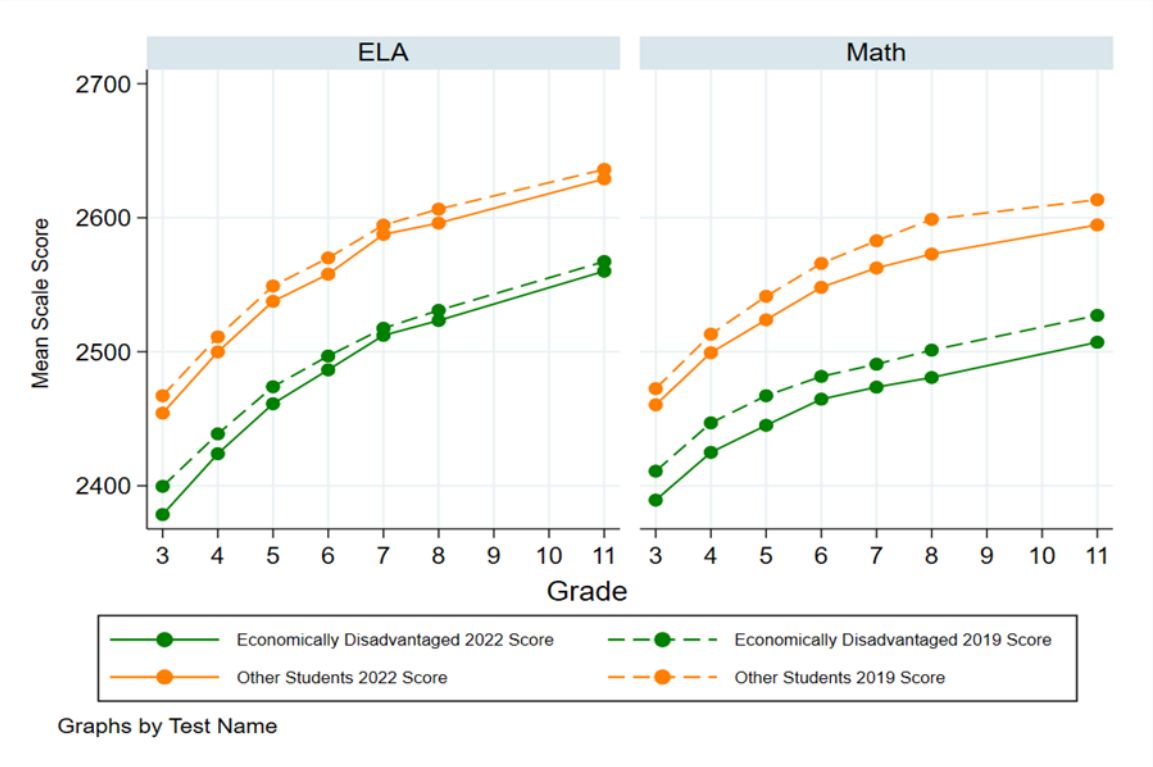
NOTES: Cells display amount of grade level loss by grade level and demographic group. The losses are estimated relative to average test scores for the given group and grade in 2019.

Learning Losses by Demographic Groups

For each demographic group we can also estimate the 2019 grade equivalent of students in each grade in 2022. Figure A3 shows the mean scale scores in the two subjects for economically disadvantaged students and for students who were not economically disadvantaged in 2019 and 2022. The figure shows sizeable drops in test scores across both groups in all grades.

FIGURE A3

In 2022 test scores fell from 2019 levels for both disadvantaged and non-disadvantaged students

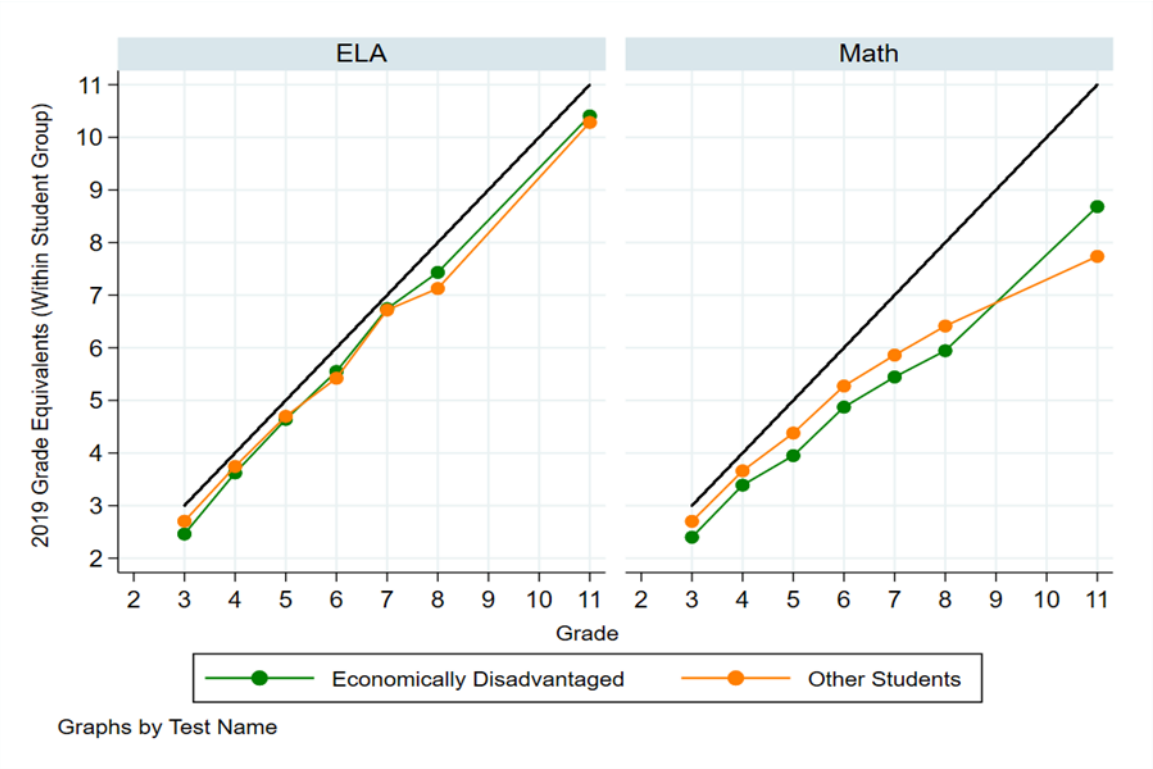


SOURCE: Smarter Balanced Assessments, California Department of Education, 2022.

Figure A4 shows losses in grade equivalents of under one grade in ELA for both groups, but much larger losses in math for both groups, especially in the upper grades. For this we use 2019 grade equivalents specific to the demographic studied rather than to the overall student population. Eleventh grade non-socioeconomically disadvantaged students lost larger grade equivalents than socioeconomically disadvantaged 11th graders.

FIGURE A4

In 2022 both disadvantaged and non-disadvantaged students' test scores were below 2019 grade equivalents, especially in math



SOURCE: Smarter Balanced Assessments, California Department of Education, 2022.

NOTE: 45-degree line represents one grade-level equivalent of learning per grade (in 2019). The blue dots depict actual test scores in 2021-22, in grade-level equivalents.

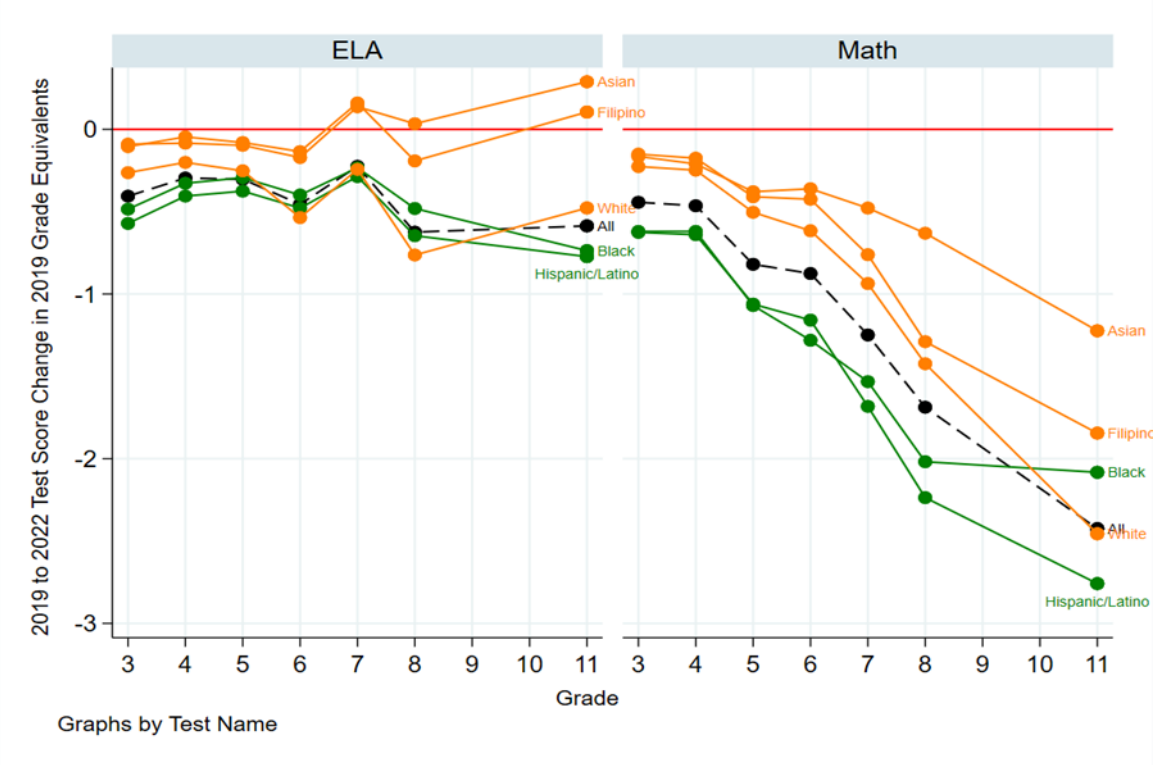
Turning to race/ethnicity, we calculate the 2019 grade equivalent for each student group's mean test score in 2022.[1] Figure A5 shows each group's learning loss in terms of grade equivalents. Groups in orange were generally above the state average in 2019 and groups in green are groups that were generally below.

For ELA, shown on the left, most demographic groups dropped between one quarter and three quarters of a grade equivalent in each grade. The notable exceptions were Asian and Filipino students, who in some middle and high school grades rose above the test scores observed for the same group in 2019. For math, shown on the right, for all groups we see major declines, typically one-quarter to a full grade equivalent loss in elementary schools, but more than one grade equivalent loss in middle and high school. For math, Asian and Filipino students experienced the smallest losses, while Latino students, Black students, White students, and students in the "other" group experienced the largest losses.

[1] Again, we calculated grade equivalents defined for each racial/ethnic group separately. Otherwise, some groups would be at a grade equivalent, based on all students, well above grade 12 and others at a grade equivalent well below grade 2.

FIGURE A5

In 2022 in most but not all racial/ethnic groups and grades, students scored below the 2019 grade equivalents



SOURCE: Smarter Balanced Assessments, California Department of Education, 2022.

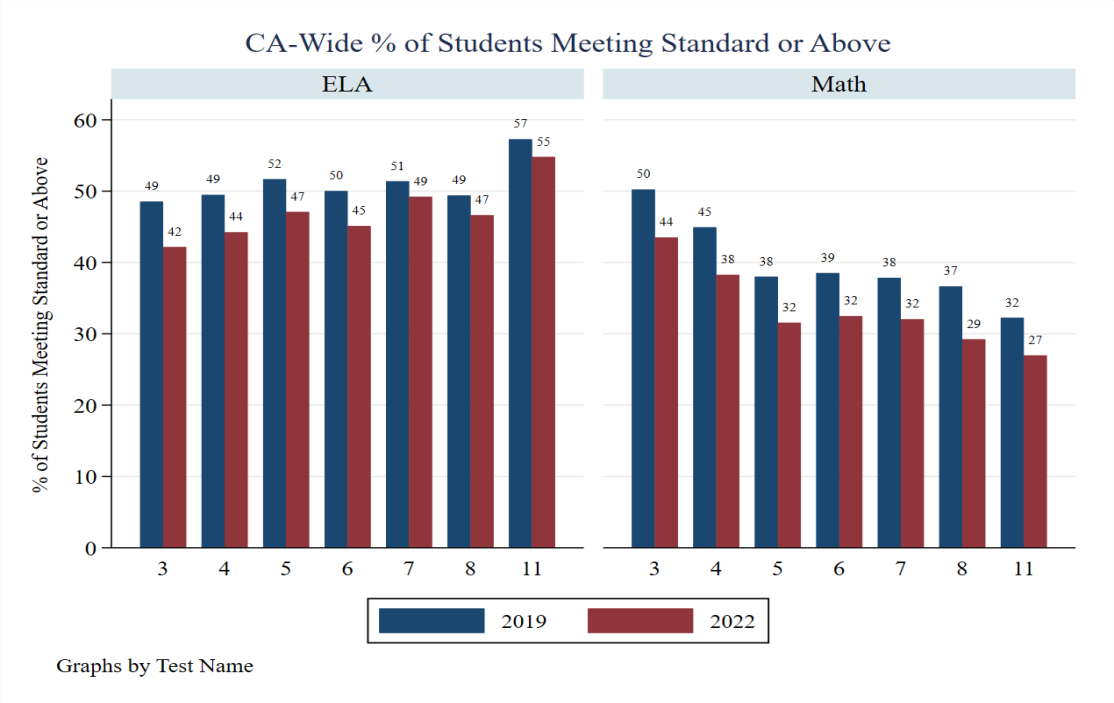
NOTE: Lines depict test score changes from 2018-19 to 2021-22, by grade, in grade level equivalent scores.

Learning Losses Measured by Percentage

Space constraints prevented us from showing changes in the share of students who were proficient for all students. The figure below provides this information.

FIGURE A2

The percentage of students meeting the standard or better fell for all grades and both subjects



SOURCE: Smarter Balanced Assessments, California Department of Education, 2022; authors' calculations.

Appendix B. Major Federal and State Stimulus Programs

As part of a larger response to combat the COVID-19 pandemic across the country, the United States federal government distributed billions of dollars through several stimulus packages to California. A significant portion of this federal funding was geared towards helping California's K–12 education system adapt to a new learning format and mitigating the harm on students' quality of education.

In response to the COVID-19 pandemic, several federal and state stimulus packages were created to support schools. Table B1 lists each of the major programs over $250 million, describing their purpose, source (federal or state), amount, allowable spending period, and allocation method.

The first package was the Coronavirus Relief Funds (CRF) which provided funds to districts to mitigate the impacts of school closures caused by COVID-19. CRF was accompanied by the first Elementary and Secondary School Emergency Relief Fund (ESSER I) as part of the CARES Act. All of the funding provided by the CARES act gave direct aid to school districts and were allocated based on Title 1[2]. The first Governor's Emergency Education Relief Fund (GEER I) also provided direct aid to districts but was allocated based on the governor's discretion. Next, GEER II and ESSER II came from the CRSA act and were allocated using the same method as the original packages. ESSER III, part of the American Rescue Plan (ARP) Act, provided funding with a focus on learning recovery. To receive ESSER III funding, districts were required to submit an expenditure plan outlining how they will use the funds before receiving them.

The state-level stimulus packages included:

- the Expanded Learning Opportunity Grant (ELO-G),
- the Expanded Learning Opportunity Program (ELO-P),
- the In-Person Instruction (IPI),
- California Community Schools Partnership Program (CCSPP),
- the Educator Effectiveness funding,
- Kitchen Infrastructure and Training (KIT),
- the Learning Recovery Emergency Block Grant,
- the Arts, Music & Instructional Materials Block Grant,
- Literary Coaches and Reading Specialists (LCRS) grant,
- Special Education Learning Recovery Support (SELRS) grant,
- funding for Teacher Residency Programs (TRPs), and
- the California Golden State Pathways Program (GSPP).

The allocation of these stimulus packages was largely based on the district's average daily attendance and the Local Control Funding Formula (LCFF), which allocates additional funding to districts with more high-need students.[3]

[2] Title I distributes funds to local education agencies based on the numbers and percentages of children from low-income families.
[3] Under LCFF, high-need is defined as low-income, English Learner, and/or foster youth.

- **ELO-G** provided funding for learning recovery efforts, with districts required to develop plans to receive the funds.
- **ELO-P** provided funding for after-school and summer school programs for transitional kindergarten through sixth grade, with allocation based on the districts' low-income and English Learner elementary populations.
- **CCSPP** is a competitive grant that provided support for community partnerships to improve student outcomes.
- The **Educator Effectiveness** funding program provided funds for professional learning and equity, quality, and effectiveness for county offices of education, school districts, charter schools, and state special schools.
- The **KIT** Funding allocations provided additional funds for kitchen infrastructure upgrades and training for food service staff.
- The **Learning Recovery Emergency Block Grant** provided funding for learning recovery initiatives supporting academic learning, staff, and pupil well-being.
- The **Arts, Music & Instructional Materials Block Grant** provided funding for instructional materials, professional development, and diverse book collections.
- The **SELRS** provided funding to districts based on the number of students with special needs in an attempt to alleviate the damage caused by the pandemic.
- The **LCRS** provided funds to develop literacy programs, employ and train literacy coaches and reading specialists, and develop programs for students in need of literacy support.
- The **GSPP** is a program set out to bolster college and career readiness by providing resources to school districts.
- Funding for **TRPs** is intended to be used to establish new teacher residency programs such as for transitional kindergarten teachers.

TABLE B1

Major Federal and State COVID-19 Recovery Funding Sources

Name	State or Federal Funded?	Brief Description	Amount	Spending Period	Allocation Method
Coronavirus Relief funds	Federal	The Coronavirus Relief Funds (CRF) provided funds to districts to mitigate the impacts of school closures caused by COVID-19.	$4.4 billion	March 1, 2020 – May 31, 2021	Number of special education students ages 3-22; based on suplemental and concentration allocation; Based on LCFF allocation
ESSER I (CARES Act)	Federal	The Coronavirus Aid, Relief, and Economic Security (CARES) Act provided funding to LEAs through the Elementary and Secondary School Emergency Relief (ESSER I) Fund, to address the impact of COVID-19 on elementary and secondary schools.	$1.6 billion	September 2020 - September 2022	Title 1
GEER I (CARES Act)	Federal	The CARES Act also provided funding to LEAs through the Governor's Emergency Education Relief Fund (GEER). Like ESSER I, GEER I also provided direct aid to districts but was allocated based on the governor's discretion.	$355 million	September 2020 - September 2022	Number of special education students ages 3-22
ESSER II (Part of CRRSA Act)	Federal	Similar to the CARES act, the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act provided direct aid to LEAs through ESSER II.	$6.7 billion	December 2020 - September 2023	Title 1
GEER II (CRRSA Act)	Federal	The second interation of stimulus funding for districts based on the governor's discretion, this time enacted through the CRRSA Act.	$341 million	December 2020 - September 2023	Number of special education students ages 3-22; California Department of Education administration
ESSER III (ARP Act)	Federal	ESSER III, part of the American Rescue Plan (ARP) Act, provided funding with a focus on learning recovery. Unlike the other ESSER packages, 20% of the funds were required to be used for learning recovery efforts. To receive ESSER III funding, districts were required to submit an expenditure plan outlining how they will use the funds before receiving them.	$15 billion	March 2021 - September 2024	Title 1
Expanded Learning Opportunity Grant (ELO-G)	State & Federal	The Expanded Learning Opportunity Grant was the first grant that was funded through federal and state funds. ELO-G provided funding for learning recovery efforts, funds were required to be used for supplemental instruction and support. Districts were required to develop plans to receive the funds and produce quarterly expenditure reports.	$2.5 billion in new funding ($2.1 billion comes from a combination of GEER II, ESSER II. and III to make a total of $4.6 billion)	September 2020 - September 2024	$1k per homeless pupil, $725 to state special schools per unit of ADA, and the rest is allocated by LCFF
In-Person Instruction (IPI) Grant	State	The In-Person Instruction Grant provided districts with funds to support in-person instruction such as buying PPE and COVID-19 tests or hiring more staff to provide in-person instruction or services.	$2 billion	September 2020 - September 2024	LCFF
Expanded Learning Opportunity - Program	State	ELO-P provided funding for after-school and summer school programs for transitional kindergarten through sixth grade, with allocation based on the districts' low-income and English learner elementary populations.	$1.8 billion in 2021-22. $4.4 billion in 2022-23. $5 billion per year is the goal.	Funds received in 2021-22 & 2022-23 must be spent by the end of the following school year. Funds received after 2022-23 have no expenditure deadline and can be carried over.	Two-Tiered System: If the LEA TK-6 is made up of 75% or more UPP then they receive 2.5k per student. LEAs with less than 75% will receive funding at a similar rate but based on remaining funds
Learning Recovery Emergency Block Grant	State	The Learning Recovery Emergency Block Grant provided funding for learning recovery initiatives supporting academic learning, staff, and pupil well-being.	$7.9 billion	September 2022 - June 2028	LCFF
Arts, Music and Instructional Materials Block Grant	State	The Arts, Music & Instructional Materials Block Grant provided funding for instructional materials, professional development, and diverse book collections.	$3.56 billion	September 2022- June 2026	ADA

TABLE B1 (CONT.)

Name	State or Federal Funded?	Brief Description	Amount	Spending Period
Kitchen Infrastructure and Training Funds (KIT)	State	The KIT Funding allocations provided additional funds for kitchen infrastructure upgrades and training for food service staff.	$750 million	Fall 2021 - June 2024
California Community Schools Partnership Program (CCSPP)	State	CCSPP is a competitive grant that provided support for community partnerships to improve student outcomes.	$4.5 billion	Fall 2021 - Fall 2031
Educator Effectiveness Block Grant	State	The Educator Effectiveness funding program provided funds for professional learning and equity, quality, and effectiveness for county offices of education, school districts, charter schools, and state special schools.	$2.8 billion	September 2021 - June 2026
Golden State Pathways Program	State	The GSPP is a program set out to bolster college and career readiness by providing resources to school districts.	$500 million	N/A
Teacher Residency Programs	State	Funding for TRPs is intended to be used to establish new teacher residency programs such as for transitional kindergarten teachers. Also provides funding for counselor residency programs.	$534 million	The TRPs are funded through 2022-23 and there is no expenditure deadline for each grant received.
Literary Coaches and Reading Specialists Grant (LCRS)	State	The LCRS provided funds to develop literacy programs, employ and train literacy coaches and reading specialists, and develop programs for students in need of literacy support.	$250 million	September 2022 - June 30 2027
Special Education Learning Recovery Support	State	The SELRS provided funding to districts based on the number of students with special needs in an attempt to alleviate the damage caused by the pandemic.	$450 million	SELRS funds began dispersing in Setember 2021 and there is no expenditure deadline for the funds.

SOURCE: California Department of Education.

NOTES: Excludes programs under $250 million. Because the Learning Loss Mitigation Fund includes CRF, GEER I and General Fund dollars it is not reported separately here.

Appendix C. Federal Stimulus Funding

TABLE C1

Expenditure report categories aggregated to top-level categories

Health, safety, and nutrition	PrepResponseEfforts; TrainSanitation; PurchasedCleaningSup; PlanCoordClosure; RepairReduceVirus; InspectAirQual; DevProtocolsCDC; HealthServices; PPEAndSafetyEquip; Nutrition
Technology, materials	PurchasedEdTech; DevicesOrConnectivity InstructionalMaterial; CommLearnHub
Mental health, SEL	MentalHealthSvcs; MentalHealth3214; SELCurriculum; PupilTrauma; TrainSEHealthAcad; BarriersLearn
Additional time	SummerAfterSchool; SummerLearnEnrich; ExtendedDay; ExtendedSchoolYear; CompAfterSchool; ExtendingTime; InstLearnTime
Resources for schools	ResourceSchools; CommSchools
Interventions; learning loss	AddLearnLoss; LearningSupport; CloseLearnGaps; ActivitiesForYouth; OtherIntervention; AcademicServices; AcadSvcsStudents; Tutoring; ImpCollegeElig; ProfessionalDevelopment
Other to maintain	OtherMaint; ESEAActivity

SOURCES: Quarterly Expenditure Reports, California Department of Education; Authors' calculations.

NOTES: Variable descriptions drawn from quarterly expenditure report files. "MentalHealth3114" is a category for mental health spending for ESSER III dollars under resource code 3214, which is allocated to address the impact of lost instructional time.

TABLE C2

Average spending by category and fiscal year, across districts (unweighted)

	Total	2020-21	2021-22	2022-23
Health, safety, and nutrition	$709	$231	$258	$220
Technology, materials	$778	$491	$190	$97
Mental health, SEL	$191	$17	$63	$110
Additional time	$119	$22	$34	$63
Resources for schools	$205	$19	$98	$87
Interventions; learning loss	$757	$220	$227	$310
Other to maintain	$564	$30	$272	$262
Total over all categories:	$3,400	$1,034	$1,173	$1,192

SOURCES: Quarterly Expenditure Reports, California Department of Education; Authors' calculations.

NOTES: Unweighted means reported across districts. Expenditures are in per-student amounts, using 2021-22 total district enrollment. Charter schools that report expenditures independently from a district's general fund are excluded.

TABLE C3

Average spending by category and fiscal year, across districts (weighted)

	Total	2020-21	2021-22	2022-23
Health, safety, and nutrition	$575	$173	$241	$161
Technology, materials	$691	$381	$214	$96
Mental health, SEL	$133	$7	$41	$85
Additional time	$124	$16	$33	$75
Resources for schools	$224	$17	$92	$115
Interventions; learning loss	$661	$206	$173	$282
Other to maintain	$506	$56	$239	$211
Total over all categories:	$2,977	$857	$1,058	$1,061

SOURCES: Quarterly Expenditure Reports, California Department of Education; Authors' calculations.

NOTES: Across districts means weighted by 2021-22 district enrollment, meaning they represent averages for the typical student (rather than the typical district). Expenditures are in per-student amounts, using 2021-22 total district enrollment. Charter schools that report expenditures independently from a district's general fund are excluded.

TABLE C4

Regression estimates (math)

	(1)	(2)	(3)	(4)	(5)
2019-2022 change in percent proficient (ELA)	-6636.41		11696.8	10451.0**	5238.1**
	(7431.9)		(7653.9)	(5065.8)	(2402.7)
Percent proficient (ELA)		-10649.0***	-11284.98***	797.784	-2045.703***
		(848.8)	(1174.2)	(1989.9)	(729.1)
LEA Share High-need				10507.37***	7250.08***
				(2286.4)	(603.9)
Observations	955	961	955	955	955
Enrollment control					X

SOURCES: Quarterly Expenditure Reports, enrollment files, SBAC research files, California Department of Education; Authors' calculations.

NOTES: Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded. Coefficients from district-level regression reported. Regressions weighted by district enrollment. Robust standard errors in parentheses. * p<0.05, ** p<0.01, *** p<0.001

TABLE C5

Regression estimates (ELA)

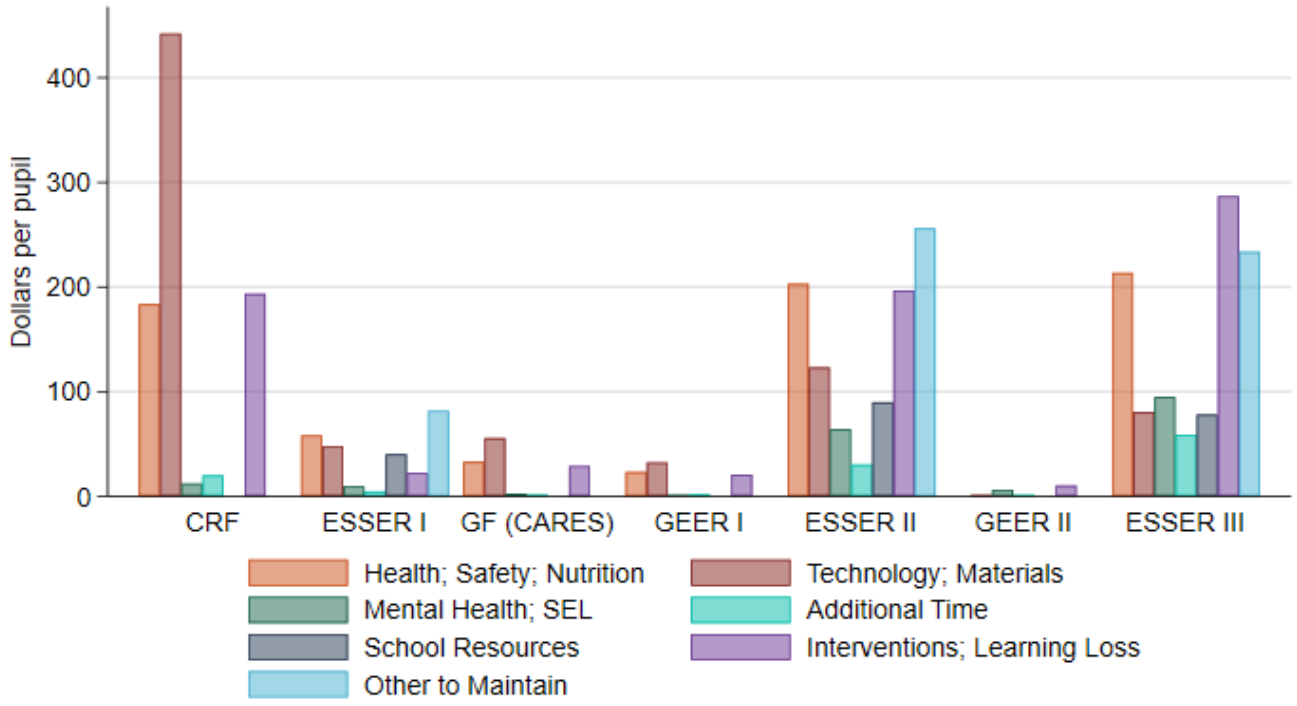
	(1)	(2)	(3)	(4)	(5)
2019-2022 change in percent proficient (ELA)	-4635.3		19232.0**	11060.2**	6054.0***
	(7379.0)		(7806.0)	4584.0	2154.9
Percent proficient (ELA)		-12301.8***	-13864.6***	-2171.38	-4454.2***
		(1070.9)	1571.6	1793.8	1024.9
LEA Share High-need				8754.1***	5949.2***
				2016.4	653.4
Observations	955	961	955	955	955
Enrollment control					X

SOURCES: Quarterly Expenditure Reports, enrollment files, SBAC research files, California Department of Education; Authors' calculations.

NOTES: Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded. Coefficients from district-level regression reported. Regressions weighted by district enrollment. Robust standard errors in parentheses. * p<0.05, ** p<0.01, *** p<0.001

FIGURE C1

Spending by category by stimulus funding program

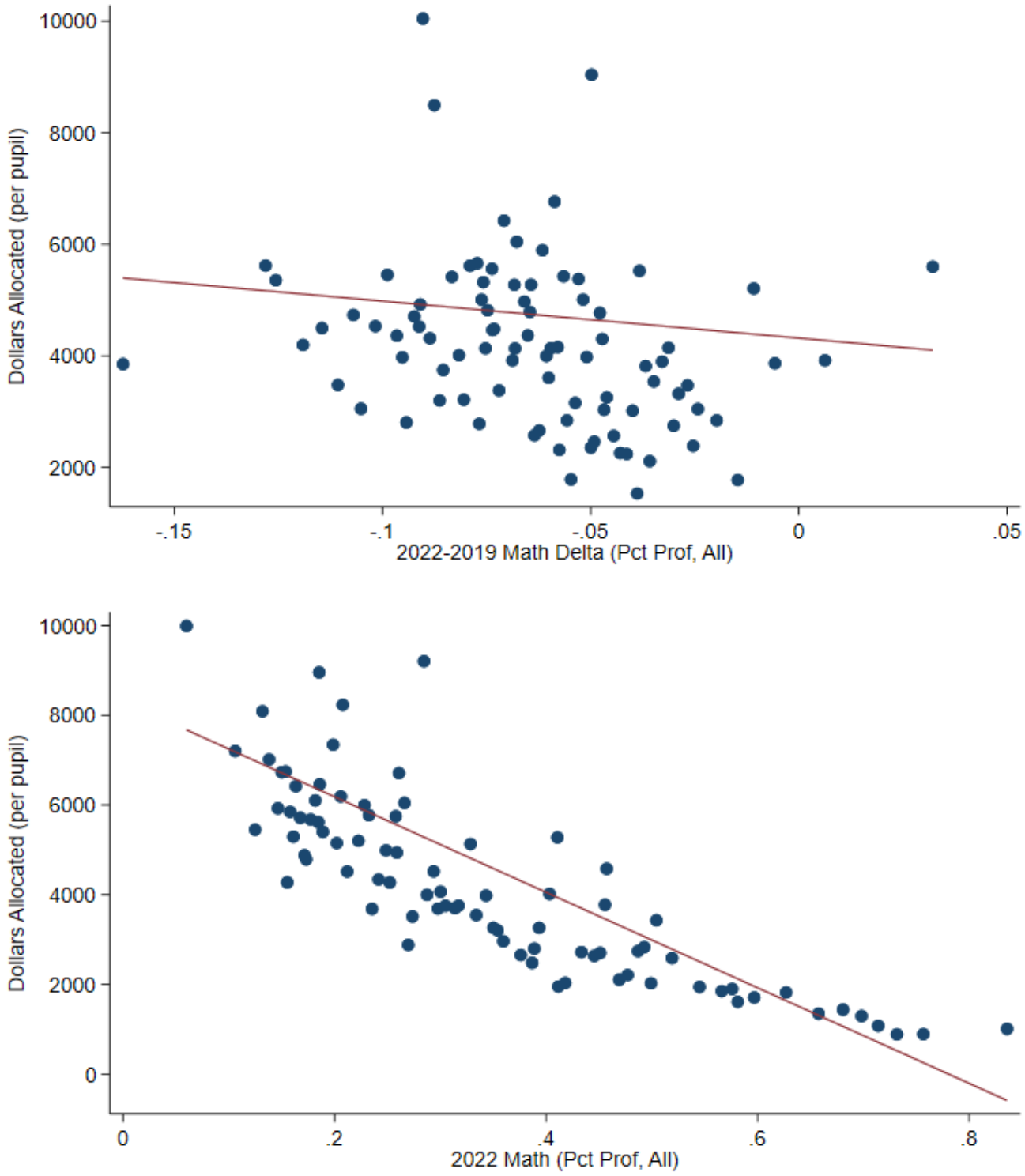


SOURCE: Quarterly expenditure reports, enrollment files, California Department of education; Authors' calculations.

NOTE: Figure reports unweighted average across districts in per student terms. Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded. Expenditure data as of March 31st 2023.

FIGURE C2

Relationship between allocated funding and learning losses in Math (Top panel) and between funding and proficiency rates in Math (Bottom panel)

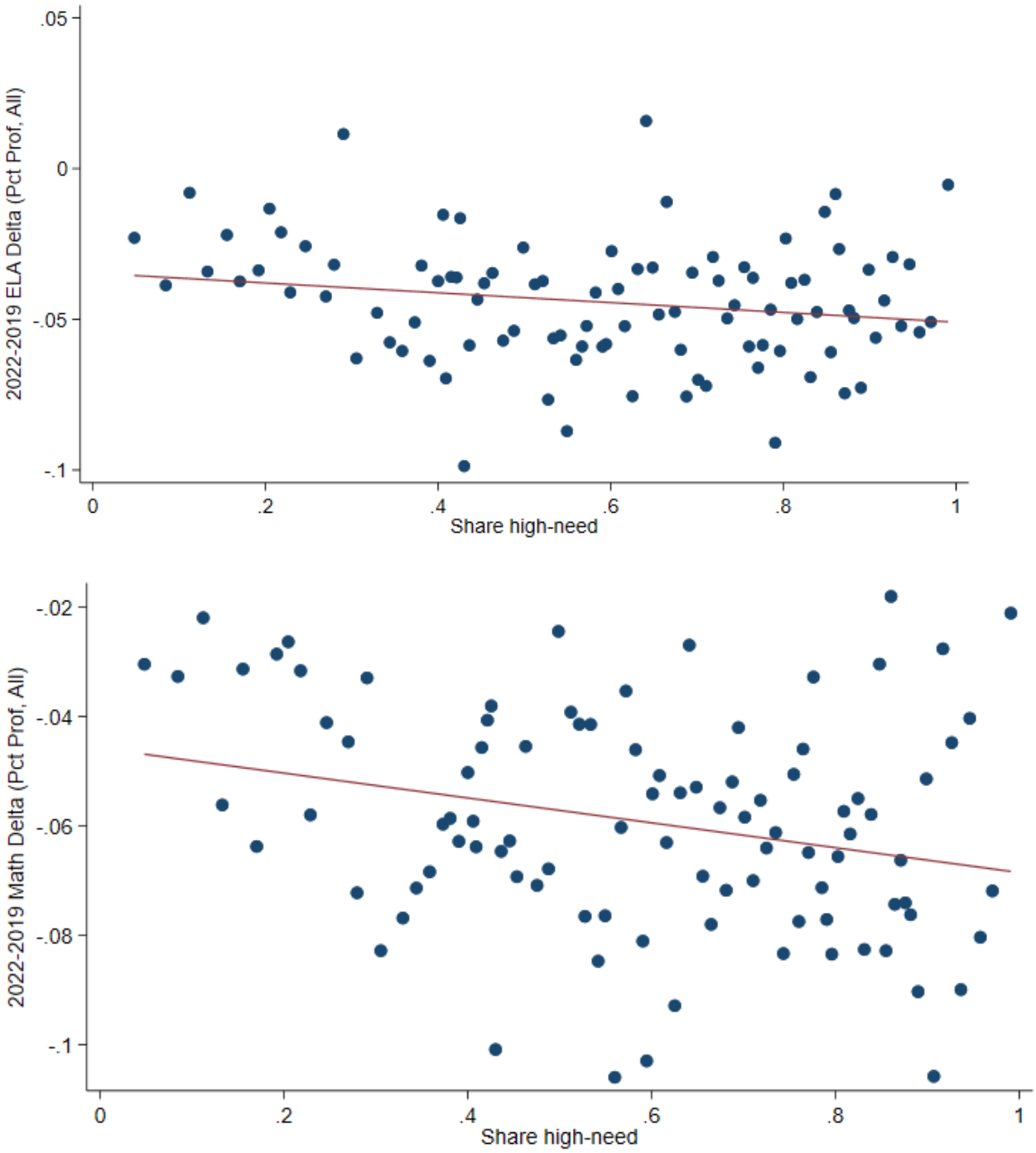


SOURCE: California Department of Education; Authors calculations.

NOTE: Each dot combines multiple districts with similar test score losses (top panel) or test score levels (bottom panel). For each group of districts, dot shows the per pupil stimulus allocation that district received (y axis) average across multiple districts, weighted by student enrollment. The line displays the line of best fit. Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded.

FIGURE C3

Relationship between 2018-19—2021-22 test score change (Top panel: ELA; bottom panel: Math) and district share high-need

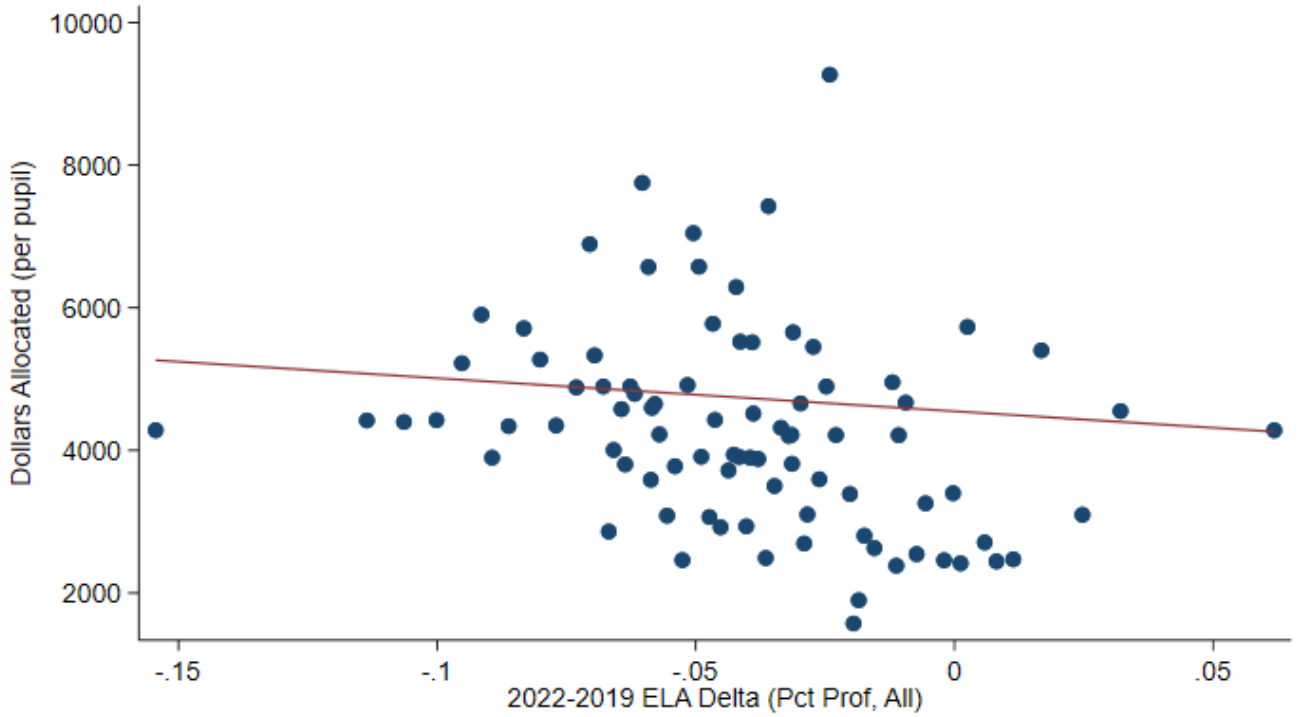


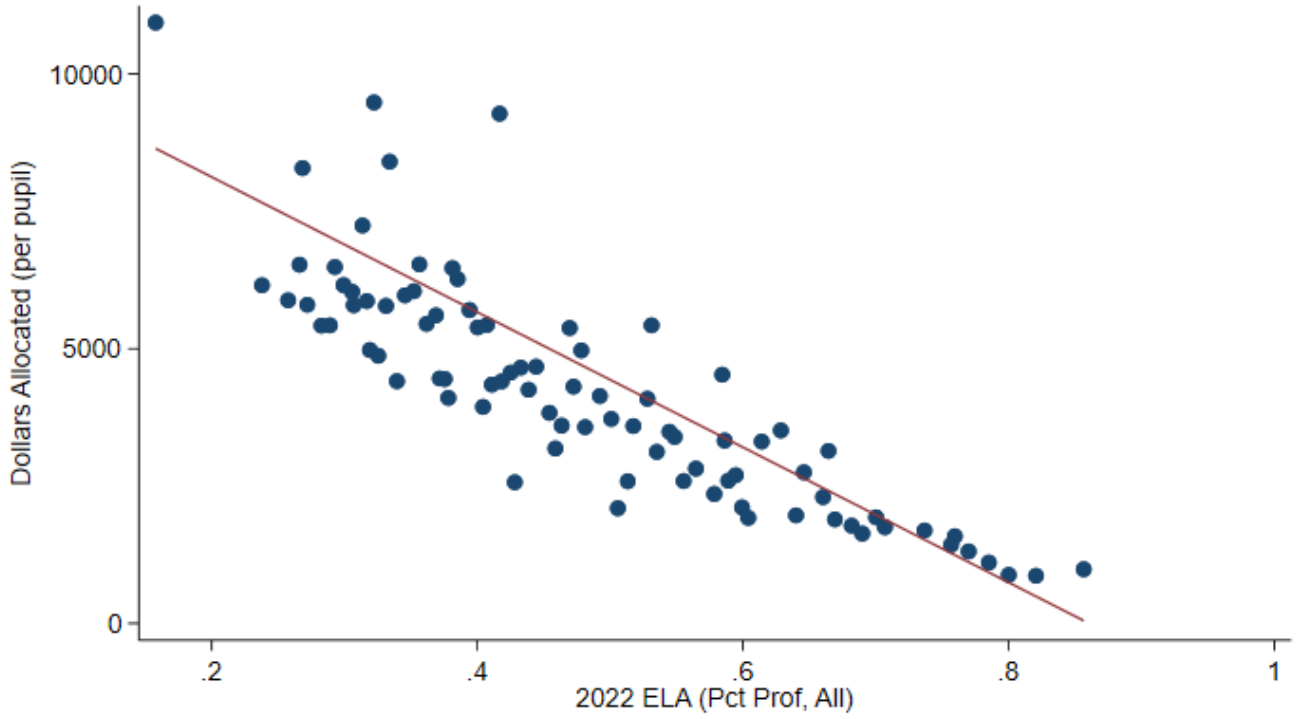
SOURCE: Enrollment files, SBAC research files, California Department of Education; Authors' calculations.

NOTES: Each dot combines multiple districts with similar ELA (top panel) or Math (bottom panel) test score changes. For each group of districts, dot shows the average learning loss (y axis) average across multiple districts with similar high-need shares, weighted by student enrollment. Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded.

FIGURE C4

Relationship between funding and 2018-19—2021-22 ELA test score change (Top) and test score levels (Bottom)



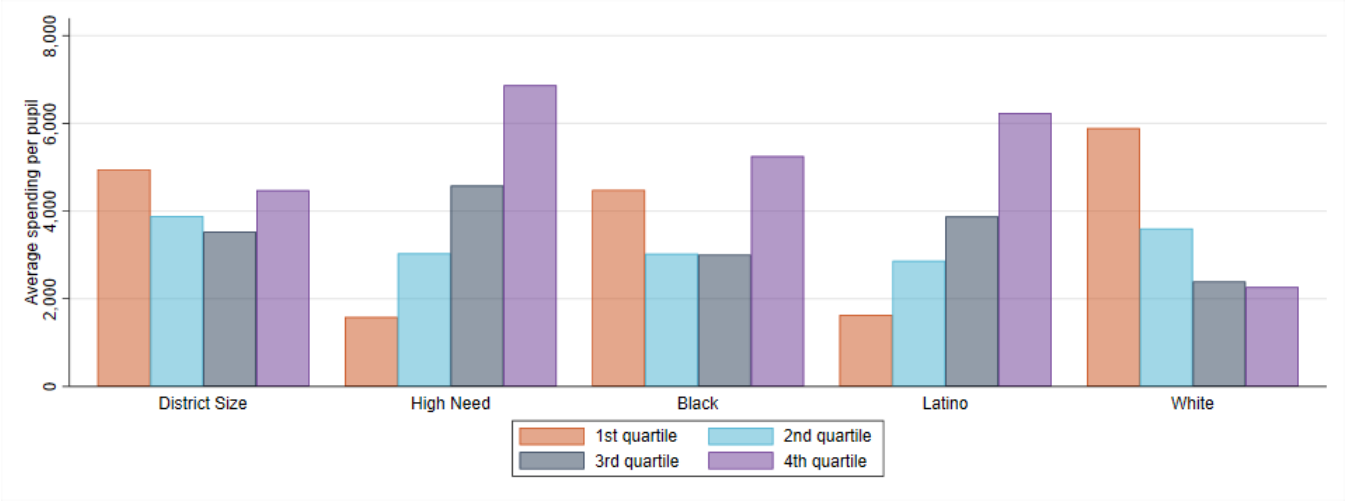


SOURCE: California Department of Education; Authors calculations.

NOTES: Each dot combines multiple districts with similar ELA test score losses (top panel) or test score levels (bottom panel). For each group of districts, dot shows the per pupil stimulus allocation that district received (y axis) average across multiple districts, weighted by student enrollment. The line displays the line of best fit. Enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded.

FIGURE C5

The state and federal governments allocated greater funding to districts with higher shares of high-need and Latino students

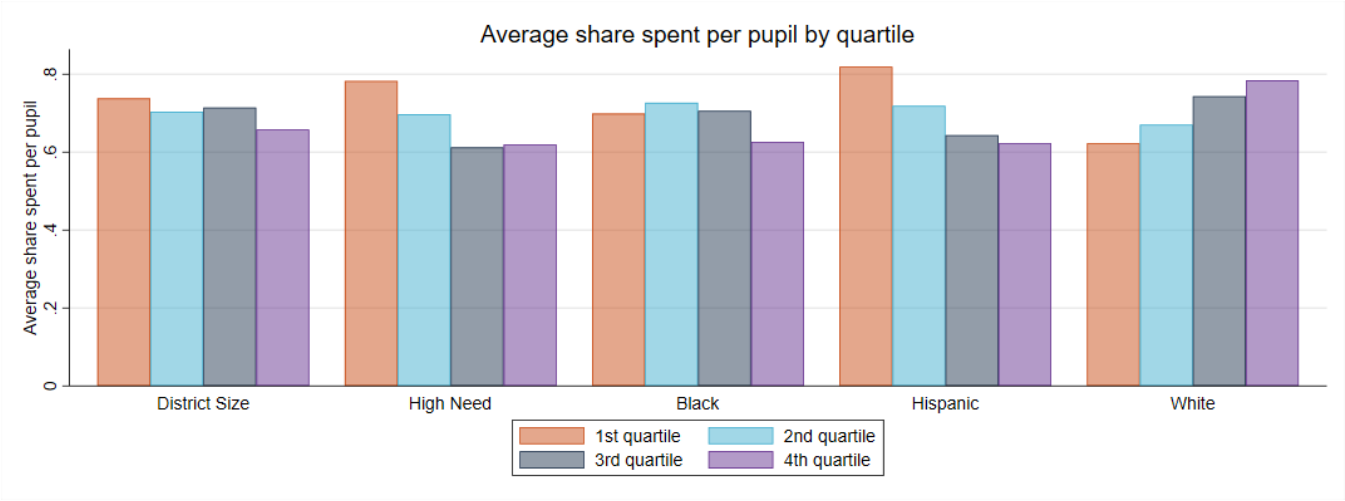


SOURCES: Quarterly Expenditure Reports; California Department of Education; authors' calculations.

NOTES: Weighted by student enrollment within quartile. The figure displays the average total allocation per pupil for different district characteristics by quartile of that characteristic. Each quartile consists of 25 percent of districts. Quartiles are ordered from smallest (first) to largest (fourth). Demographic and enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded.

FIGURE C6

Share spent per quartile, weighted by student enrollment.



SOURCES: Quarterly Expenditure Reports; California Department of Education; authors' calculations.

NOTES: Weighted by student enrollment within quartile. The figure displays the share spent as of January 2023 for different district characteristics by quartile of that characteristic. Each quartile consists of 25 percent of districts. Quartiles are ordered from smallest (1st) to largest (4th). Demographic and enrollment data is from the 2021–22 school year. Charter schools that report expenditures independently from a district's general fund are excluded. Expenditure data as of March 31st 2023.

Appendix D. State ELO-G Funding

All districts are required to develop a local plan that describes:

(1) how students' needs will be assessed;

(2) how they will provide supplemental instruction and support;

(3) their expenditure plan; and

(4) how the district is coordinating its ELO-G with ESSER to maximize support for students and staff.

Districts are strongly recommended to post their plans on their websites, so we built a web scraper in python to scan district websites and search for ELO-G plans. This gave us 525 ELO-G plans serving 65% of K-12 students in California. We did a manual search for the rest and obtained another 295 plans. Our final sample includes 820 districts, and those districts serve 97% of the K-12 student population.

Among those 820 districts, 791 (96%) reported valid expenditure data (stored in a table format in pdfs). Districts without ELO-G plans or valid expenditure tables are more likely to be small, elementary districts in rural communities and those districts have smaller shares of Latino students (Table D1).

TABLE D1

Characteristics of districts with and without valid ELO-G expenditure tables

	District with valid expenditure table	District without valid expenditure table
Enrollment	6312	1923
% Asian	7%	5%
% Black	3%	1%
% Latino	48%	39%
% Low-income	52%	51%
% EL	18%	15%
Urban	17%	9%
Rural	31%	58%
Elementary district	52%	74%
High school district	9%	5%
Unified district	39%	22%
N of districts	791	151

SOURCES: Authors' calculations

NOTES: All difference significant at 10% level or below except for low-income (free/reduced price lunch) share.

We wrote a python script to extract the expenditure tables and constructed a database that details district spending for each of the 7 spending categories. We then merged this data to public datasets on district characteristics such as enrollment size, student demographics, student needs, and geographic location. The results are presented and discussed in the main text.

In 59 districts, the shares of ELO-G spending add up to more than 100%. This could happen when districts did not interpret those categories as mutually exclusive. For example, when a district spent $500,000 to hire additional instructional supports to provide small group instruction in the summer, the investment can be counted toward both strategy 1 (extending instructional learning time) and strategy 2 (programs to accelerate student learning). In those cases, we inflate the totals so the shares add up to 100%. Those 59 districts do not seem to differ from other districts in any observable characteristics (e.g., enrollment, student demographics, student need, and geographic location). We also ran analyses excluding those 59 districts and those results are nearly identical and available upon request.

To explore the difference in ELO-spending by district characteristics, we ran a simple OLS regression for each spending category and the results are summarized in Table D2. Generally speaking, % of low-income students, % of English learners, and geographic locations are significant predicators of district spending plans. For example, districts with more low-income students are more likely to extend instructional learning time, but less likely to spend on programs to accelerate student learning.

TABLE D2

Regression of ELO-G spending on district characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	% spent on strategy 1	% spent on strategy 2	% spent on strategy 3	% spent on strategy 4	% spent on strategy 5	% spent on strategy 6	% spent on strategy 7
enrollment	-0.0000	0.0000	-0.0000*	0.0000	0.0000	0.0000	-0.0000
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
% Asian	0.0462	-0.0807	-0.0061	0.0723	0.0417	-0.0878*	0.0145
	[0.0818]	[0.0950]	[0.0595]	[0.0454]	[0.0298]	[0.0519]	[0.0319]
% Black	-0.2191	0.0961	0.0665	-0.0195	-0.0482	0.0204	0.1038
	[0.1903]	[0.2211]	[0.1384]	[0.1057]	[0.0695]	[0.1208]	[0.0743]
% Latino	0.0010	-0.0579	-0.0033	0.0083	0.0258	0.0108	0.0152
	[0.0496]	[0.0576]	[0.0361]	[0.0275]	[0.0181]	[0.0315]	[0.0193]
% FRPM	0.1373***	-0.1034**	-0.0124	0.0245	0.0492***	-0.0779***	-0.0173
	[0.0396]	[0.0460]	[0.0288]	[0.0220]	[0.0144]	[0.0251]	[0.0154]
% EL	0.1929**	0.0678	-0.0966*	-0.0336	-0.0996***	-0.0038	-0.0272
	[0.0771]	[0.0896]	[0.0561]	[0.0428]	[0.0281]	[0.0489]	[0.0301]
urban	0.0060	-0.0235	0.0317*	-0.0099	0.0002	-0.0100	0.0057
	[0.0224]	[0.0260]	[0.0163]	[0.0124]	[0.0082]	[0.0142]	[0.0087]
rural	-0.0194	0.0283	-0.0020	0.0046	-0.0046	0.0087	-0.0156**
	[0.0193]	[0.0224]	[0.0140]	[0.0107]	[0.0070]	[0.0122]	[0.0075]
Constant	0.1478***	0.3844***	0.1922***	0.0474***	0.0201**	0.1372***	0.0708***
	[0.0246]	[0.0286]	[0.0179]	[0.0137]	[0.0090]	[0.0156]	[0.0096]
Observations	791	791	791	791	791	791	791
R-squared	0.070	0.021	0.021	0.005	0.034	0.022	0.020

SOURCES: Authors' calculations.

NOTES: Standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1

TABLE D3

Difference in ELO-G spending plans, by district characteristics.

% of ELO-G grant spent on …	All districts	High poverty	Low poverty	Urban	Rural	High Black/Latino	Low Black/Latino	High EL	Low EL
Extending instructional learning time	25%	31%	19%	26%	23%	32%	21%	31%	19%
Accelerating progress through learning supports	32%	30%	36%	30%	35%	31%	37%	31%	36%
Integrated student supports	17%	14%	16%	19%	17%	13%	17%	14%	18%
Community learning hubs	6%	7%	6%	6%	6%	7%	6%	6%	6%
Supports for credit deficient students	4%	4%	2%	5%	4%	4%	4%	4%	4%
Additional academic services	10%	8%	13%	8%	11%	8%	10%	8%	11%
Training for school staff	6%	6%	7%	7%	5%	6%	6%	6%	6%
N of districts	791	195	147	136	241	192	209	215	169

SOURCES: Authors' calculations.

NOTES: Supports for credit deficient students only apply to unified and high school districts. High poverty: at least 75% of students are eligible for free/reduced price lunch. Low poverty: less than 25% of students are eligible for free/reduced price lunch. High Black/Latino: at least 75% of students are Black or Latino. Low Black/Latino: less than 25% of students are Black or Latino. High EL: at least 25% of students are English learners. Low EL: less than 5% of students are English learners.

Appendix E. Case Study Methods and Interview Protocols

We began our interviews (remotely) in spring 2021, one year after the nationwide closure of schools and shift to online instruction. Our three rounds of interviews and multiple site visits engaged district leaders, school principals, and teacher leaders over the 16-month period. Our research team began interviews with district superintendents and top staff by spring 2021, conducted on Zoom or in-person as the pandemic let up. We focused on lead district staff who made key budget decisions, along with teaching-learning specialists who fostered adaptation to remote instruction and fostered innovations. A year later – by early spring, 2022 – conditions had eased, allowing site principals to participate in interviews or focus groups. (Leaders in all three districts granted principals varying levels of discretion in setting budget priorities, adapting to community contexts, and pursuing organizational change as we detail below.)

At least three team members attended each interview or focus group that we conducted during our 16 months of field work. This resulted in more than 100 pages of field notes that we coded for major themes and findings. We ran an inter-coder reliability check to establish consensus and sufficient reliability among researchers in how we interpreted quotes from participants and key results. The coded results inform the five areas of findings that surfaced among our participating districts detailed in this report and in our working paper [add hyperlink].

We contacted several districts – set in differing parts of California – to inquire about their openness to multiple rounds of interviews and site visits from our team. This would require generosity and trust expressed by candidate districts. One local superintendent reached out to us, following publication of our earlier report on school innovation during the pandemic. A second was known for its innovative character, focusing on student mastery of specific proficiencies where students work with learning facilitators. The third district eventually selected was moving inventively to get teachers up to speed on digital tools during the first year of school closures. They proved open to a deeper dive into their budget practices and organizational inventions.

The resulting three districts – those agreeing to participate – should not be considered representative of California's diverse local education authorities. But these three districts do manifest significant variety in their budget priorities, methods for making allocation decisions, and types of organizational and pedagogical innovations they pioneered and shared with us.

District Profiles

The three selected districts are geographically dispersed across the state and serve a diverse variety of students and families. Table E1 offers a brief summary of their characteristics.

TABLE E1
Case study district characteristics

	Enrollment	Annual budget (2021-22)	Students eligible for free or reduced price meals (FRPM)	English learners
Lindsay Unified	4,000	$109 million	89%	37%
Milpitas Unified	10,072	$169 million	29%	24%
So.Cal Unified	25,000	$420 million	42%	20%
State average (unified districts)	10,732	$213 million	58%	19%

SOURCES: Department of Education CALPADS UPC Source File, 2021-22; SACS annual unaudited actual, 2020-21.

NOTES: "So Cal Unified" requested to remain anonymous. Their enrollment and budget numbers are rounded to avoid possible identification.

Lindsay Unified, situated between Fresno and Bakersfield, has innovated over the past two decades to help students master learning proficiencies at their own pace, steadily guided by "learning facilitators". The district primarily serves a low-income Latino community, enrolling about 4,000 students each year in this rural part of the Central Valley. Fifty-three percent are considered English Learners, and nine in 10 are eligible for free or reduced-price meals (FRPM). Two-fifths of parents residing in the district have not graduated from high school. District leaders aim to elevate their community, offering meals and health care, raising new teachers from within, and reaching out to parents. The district was innovating long before the Covid era, achieving notable results for students through a mix of conventional classes and personalized learning – tied to moving all kids toward state learning standards. Lindsay Unified operates on a yearly budget of $77 million, hosting six elementary schools, one regular and one continuation high school.

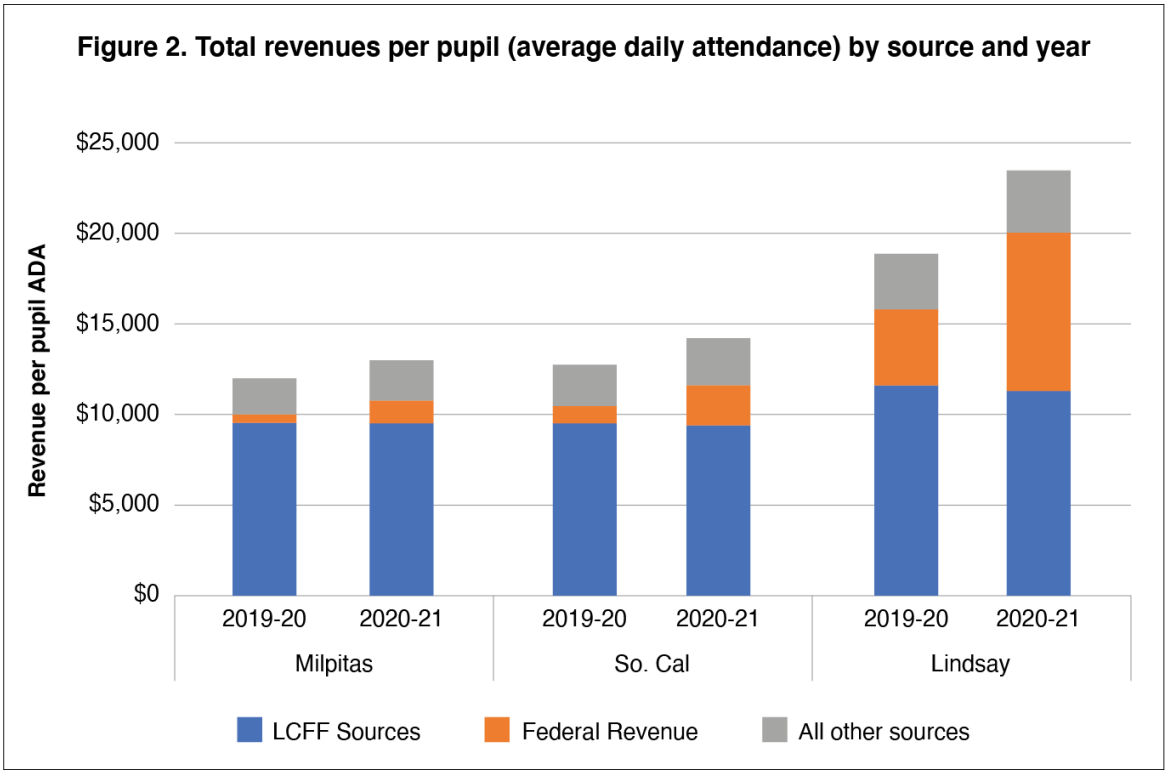
Milpitas Unified, located north of San Jose, hosts two child development centers, 10 elementaries, two middle and two high schools. A new "middle-college" site fosters postsecondary coursework for students who still attend high school. Total enrollment, declining slightly, stands at just over 10,000 students. More than one-fifth are designated English Learners. The district has experienced an influx of refugees from Central America and was piloting a tailored curriculum for these students just prior to the pandemic. Twenty-nine percent of all Milpitas pupils are FRPM eligible, yet families served range from impoverished to affluent parents working nearby in Silicon Valley. The district's annual budget equaled $118 million in 2021-22. A single dual-language campus serves children entering Transitional Kindergarten. A new "innovation campus" broke ground this year and will offer programs in STEM, art and design, digital tools, and job apprenticeships for high school students, building from the community-school model. Over 85 percent of students reported feeling safe and supported by teachers in a recent climate survey.

So.Cal Unified, an anonymous district located in Los Angeles County, served more than 24,000 students in 2021, including a diverse range of low-income and affluent families. One-fifth of So.Cal's pupils are classified as English Learners, and 46 percent qualify for free or reduced price meals (FRPM). The district has long innovated with dual-language programs, currently hosting seven different languages, including Spanish, Mandarin, and European languages. The district operates 10 pre-K programs, 20 elementary schools, four middle and four high schools, funded by a $298 million annual budget in 2021-22. A well-staffed teaching and learning office distinguishes So.Cal, helping to foster pedagogical innovations, such as project-based learning and "flipping" classrooms so that students prepare at home for more complex instruction at school. District leaders preferred to remain anonymous for purposes of this report.

All three districts enjoyed gains in total funding during the pandemic (Figure E1). California's state government supplemented federal support of basic health and safety efforts mounted by district leaders. So.Cal and Milpitas each received about $10,000 in LCFF dollars per pupil in 2021-22. Lindsay approached $13,000 per pupil in LCFF funding, largely due to serving a greater concentration of low-income families than the other two districts. All three districts benefited from gains in federal revenues. Per pupil revenue grew to nearly $15,000 in So.Cal for 2020-21. Lindsay received about $24,000 per pupil in 2020-21, with the increase largely due to increased federal funding. Here revenues from the state's Expanded Learning Opportunity (ELO) program and grants are included in "all other sources".

FIGURE E1

Per pupil funding increased, mostly due to federal sources



SOURCE: Reproduced from Figure 2 of "Recovery and Renewal in Three California School Districts" (2023), by Bruce Fuller, Karina Du, Niu Gao, Laura Hill, Julien Lafortune, Emmanuel Prunty, and Darriya Starr.

NOTE: Revenue reported per unit of ADA in the specified school year, using data from the California Department of Education.

Interview protocol

Budget allocations and program adjustments

Districts have received federal stimulus dollars, Expanded Learning Opportunity Grants (ELO-G) from the state, and augmentations to Local Control Funding.

1. What programs, staff categories, or cost centers ('buckets') have received additional funding as you recover from Covid and move forward? What are your top three priorities in terms of achieving organizational stability and advancing improvements? Do three or four 'bins' or program initiatives benefit most from this new funding?

2. Do the program requirements of federal stimulus or ELO-G dollars nudge you in certain directions or advance finance priorities that you had already emphasized? Do federal and state reporting requirements seem complementary or at times contradictory, pushing you in differing directions?
3. Do you see current funding stimulus as temporary, somewhat independent of longer-term budget planning?
4. Do you feel that you have had room and funding to pursue specific innovations? Or, would you say you are strengthening what you were already doing? What staff categories (certified, classified, others) have expanded most and why?
5. Half the school year has passed since we last talked. Did you have to adjust your aspirations, priorities a bit in face of the pandemic and other pressures? Have these adjustments been pushed by external events, or do you feel you can adjust priorities with intentionality?
6. Have parts of your 'recovery and innovation' strategy required engaging labor partners?
7. To what extent have labor shortages constrained hiring and program priorities?
8. Are you expanding after-school care, perhaps growing out TK? Does the ELO-G instructional day requirement affect your plans?

Teaching and learning innovations

Last summer you reported several exciting innovations: [e.g., moving to block scheduling, integrating teaching technologies into regular classroom practices, even 'flipping' classrooms and moving more toward complex, challenging instruction in classrooms, varies by district].

1. Which of these innovations have stuck inside a significant share of classrooms? Have teachers embraced such pedagogical improvements, or has Omicron and other events led them to 'hunker down' and return to conventional practices?
2. How have principals, teacher leaders, your IT staff at school sites impeded or fostered specific innovations?
3. How have federal stimulus and ELO-G dollars from the state helped to support teaching and learning innovations? Do federal or state requirements discourage classroom innovation?
4. Have you seen promising innovations fade out or lose staff support or resources – perhaps when school staff breathe easier and return to normal routines?

For principals and teacher leaders

1. How has the school year unfolded so far? Have you remained open or had to close due to Covid outbreaks? How would you say teachers are feeling, their overall morale?
2. Do you feel that you and your staff have returned to basic routines? Or, is there a 'new normal,' a sense that classroom teaching and school management has changed forever?
3. What are your major challenges day to day? What are the biggest demands on your time that you experience?
4. We understand that you developed a new school plan – lending structure to new staff positions and dollars coming to your school. What priorities and funding targets did you emphasize? Have you experienced flexibility from the district office in terms of how you allocate new resources? Do you feel your spending priorities have shifted since last summer's planning?
5. We have heard that district leaders hope to foster a variety of teaching and learning innovations – such as, block scheduling, better integration of instructional technology, using classroom time in less didactic ways? Has your school embraced these kinds of innovations, or has it proven difficult given external constraints?
6. How have your teachers approached innovations and perhaps move beyond the "old normal"? Do your colleagues prefer a return to old routines and ways of doing schooling? If you are adding (classified) support staff, are they taking on new activities, novel roles in any way?
7. Over the past six months have you tried to focus on certain students to recover 'learning loss'? What innovative practices have you tried to better lift SPED, EL, or dual-language kids?

8. During the era of remote instruction did you pare-back curricular standards that could be reasonably addressed by your teachers? Do some subjects now get less attention, given concern over 'core curricular standards'? Have you experienced any shift toward social-emotional learning for your kids?
9. What forms of professional development have been most helpful for you and your teachers over the past year?
10. Who do you consult for social support and/or learn of new approaches for managing your school, considering innovations in the teaching-learning domain?

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