30-Minute Webinar:
How Can Districts Measure Learning Loss Recovery Costs?

Pandemic Recovery

ESSER CARES ARP GEER
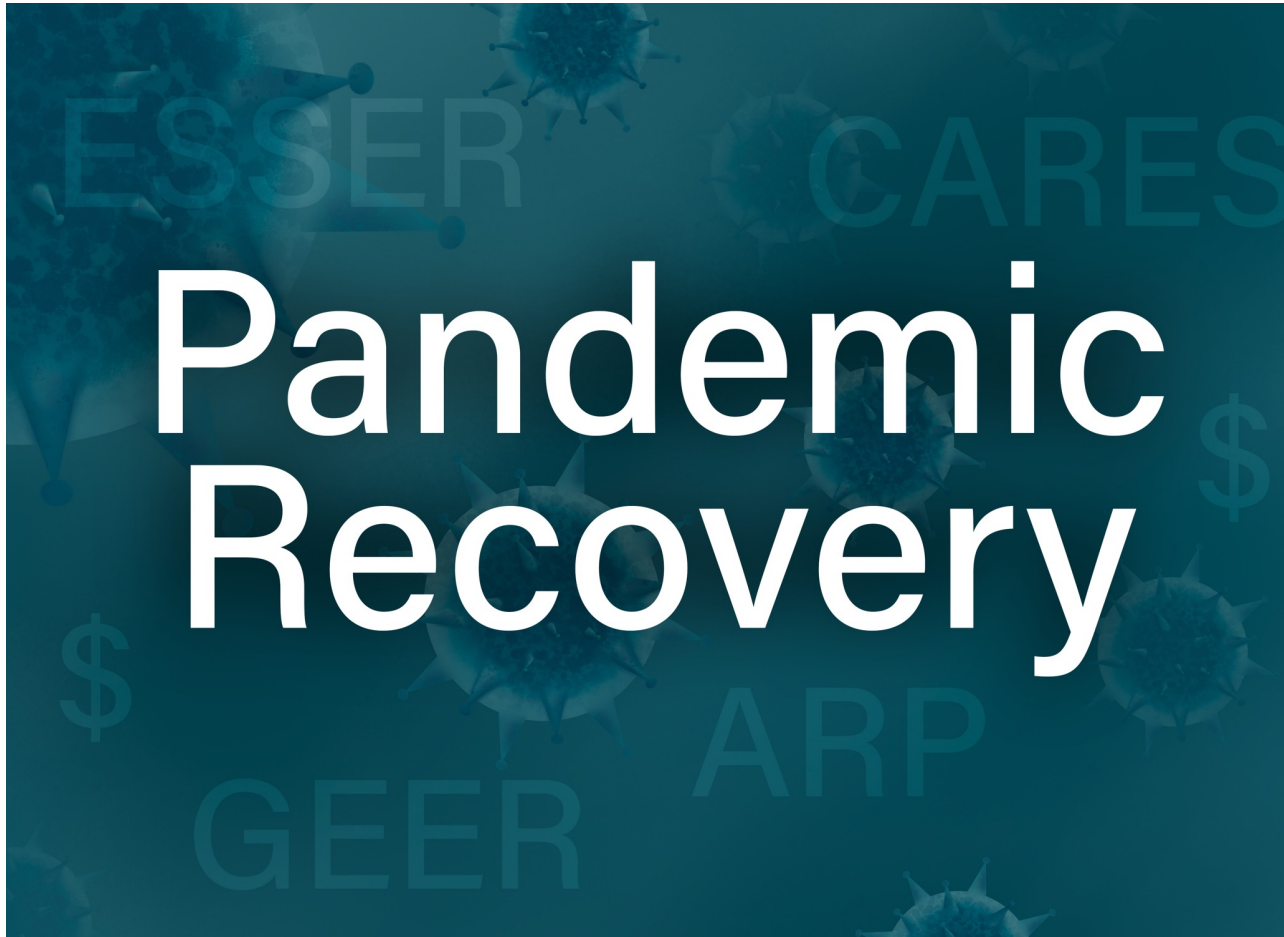
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Slides available at edunomicslab.org

Note: Presentation is on-the-record but Q&A after is off-the-record unless otherwise noted

We now know that students are behind in their learning

DAILY NEWS
A Sobering Picture in Preliminary Test Results [2]

DAILY NEWS
COVID-19 and student learning in the US: The hurt could last a lifetime [5]

DAILY NEWS
The Pandemic Hurt These Students the Most [3]

DAILY NEWS
Kids Are Far, Far Behind in School [6]

DAILY NEWS
Biggest Disruption in the History of American Ed
For many students, school closures meant *no school*—literally none at all. [4]

DAILY NEWS
Surprise! Students learned less when they were remote [1]

1. https://www.npr.org/2022/06/22/1105970186/pandemic-learning-loss-findings 2. https://chicago.chalkbeat.org/2022/6/16/23170206/chicago-public-school-illinois-assessment-readiness-spring-preliminary-scores-pandemic-fallout
3. https://www.nytimes.com/2021/07/28/us/covid-schools-at-home-learning-study.html 4. https://www.theatlantic.com/ideas/archive/2022/06/covid-learning-loss-remote-school/661360/ 5. https://www.mckinsey.com/industries/education/our-insights/covid-19-and-student-learning-in-the-united-states-the-hurt-could-last-a-lifetime 6. https://www.theatlantic.com/ideas/archive/2022/05/schools-learning-loss-remote-covid-education/629938/

Here's how to do the math on how deep the losses were

1. First, estimate impact of lost learning time for students in your district.

$$(1) \ R_{i1} = S_{i1} - (\hat{\beta}_0 + Race_{i1}\hat{\beta}_{Race}$$

$$+ \ Pov_{j1}Mode_{j,2021}\hat{\beta}_3 + X_{ij1}\hat{\beta}_4)$$

$$+ \ Pov_{j1}\hat{\beta}_1 + Mode_{i,j2021}\hat{\beta}_2$$

2. Then, simply apply effect sizes from prior research to estimate whether interventions are sufficient.

Table 1. Pandemic Achievement Gains by Student and School Characteristics, Math

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Race (Reference: White)							
Black	-0.119		-0.101	-0.036	-0.040	-0.057	-0.040
	(0.012)		(0.011)	(0.004)	(0.007)	(0.005)	(0.007)
Hispanic	-0.092		-0.077	-0.032	-0.014	-0.043	-0.014
	(0.015)		(0.015)	(0.003)	(0.007)	(0.004)	(0.007)
Asian	-0.013		-0.020	-0.029	0.005	-0.026	0.005
	(0.013)		(0.013)	(0.006)	(0.010)	(0.007)	(0.010)
Other	-0.041		-0.035	-0.019	-0.017	-0.025	-0.017
	(0.009)		(0.009)	(0.003)	(0.009)	(0.004)	(0.009)
Baseline Score (Reference: Top Quartile)							
Middle Quartiles		-0.053	-0.040	-0.012	-0.030	-0.016	-0.030
		(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Bottom Quartile		-0.107	-0.078	-0.022	-0.053	-0.030	-0.053
		(0.008)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
School Poverty (Reference: Low <25%)							
Middle (25%-75%)					-0.018	0.020	-0.017
					(0.014)	(0.014)	(0.014)
High (>75%)					-0.002	0.024	-0.001
					(0.019)	(0.019)	(0.019)
Remote Schooling							
% Remote in 2020-21					-0.201	N/A	-0.199
					(0.035)		(0.034)
Interactions:							
• Middle Poverty					-0.086	-0.103	-0.086
					(0.034)	(0.023)	(0.034)
• High Poverty					-0.158	-0.183	-0.159
					(0.037)	(0.030)	(0.037)
Hybrid Schooling							
% Hybrid in 2020-21					-0.033	N/A	-0.033
					(0.019)		(0.018)
Interactions:							
• Middle Poverty					-0.051	-0.023	-0.051
					(0.020)	(0.021)	(0.020)
• High Poverty					-0.117	-0.084	-0.119
					(0.032)	(0.029)	(0.033)
% Tested in School							0.027
							(0.033)
Constant	-0.208	-0.194	-0.175	N/A	-0.098	N/A	-0.122
	(0.006)	(0.006)	(0.006)		(0.014)		(0.033)
Fixed Effects?	No	No	No	School	No	District	No

Here's the math on how deep the losses were

1. First estimate student learning losses for your district.

(1) $R_{i1} = S_{i1} - (\hat{\beta}_0 + Race_{i1}\hat{\beta}_{Race}$

$+ Pov_{j1}Mode_{i,2021}\hat{\beta}$

2. The from p wheth sufficient.

There's an app for that!
"The Calculator" does this for 8000 districts.
Edunomicslab.org/calculator

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	(0.015)		(0.015)	(0.003)	(0.007)		(0.007)
Asian	-0.013		-0.020				0.005
	(0.013)		(0.013)				(0.010)
Other	-0.041						-0.017
							(0.009)
Middle							-0.030
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							14)
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Hybrid Schooling							
Hybrid in 2020-21					-0.033	N/A	-0.033
					(0.019)		(0.018)
Interactions:							
• Middle Poverty					-0.051	-0.023	-0.051
					(0.020)	(0.021)	(0.020)
• High Poverty					-0.117	-0.084	-0.119
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% Tested in School							0.027
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	(0.006)	(0.006)	(0.006)		(0.014)		(0.033)
Fixed Effects?	No	No	No	School	No	District	No

We start with the NBER research and import district data

Pandemic effect on all kids

➕ Disproportionate impact on low-achievers

➕ Additional effect on Black/Hispanic students

➕ Bigger losses for low-income students

➕ Weeks spent in remote / hybrid school → Data from AEI Return To Learn Tracker

➕ Interaction between remote/hybrid & income

═ Estimated learning gap (which we then converted to weeks) → Used NWEA growth data

... to compute district-by-district estimates

Select a State
California

Select a District
Los Angeles Unified

Based on how long this district's schools operated remote or hybrid and its mix of student characteristics and prior performance levels, recent research helps us estimate that

Students in

Los Angeles Unified →

lost an average of:

22 weeks of learning in **math**
18 weeks of learning in **reading**

Costs to remedy this magnitude of loss depend on the intervention utilized. Tutoring is considered a higher impact investment. Cost predictions suggest this district would need to spend an estimated amount of:

$851,046,581 for tutoring in math
$466,948,430 for tutoring in reading

To pay for these investments, the district could tap the

$2,578,201,826
it received in federal relief funds (known as ESSER III)

Falls Church City (VA) –
Low-poverty & mostly closed
11 weeks of learning in **math**
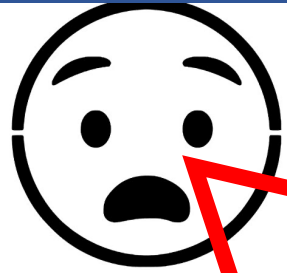**5 weeks** of learning in **reading**

Brevard (FL) –
Mid-poverty & fully open
6 weeks of learning in **math**
4 weeks of learning in **reading**

Galena Park ISD (TX) –
High-poverty & mostly open
11 weeks of learning in **math**
10 weeks of learning in **reading**

A standard academic year has 36 weeks. Losses of this size would have tremendous consequences for kids...

If unaddressed, these learning impacts could permanently impact a generation of children:
- ✓ ~$2T lost wages[1]
- ✓ Reduced education attainment[2]
- ✓ More reliance on government welfare[2]
- ✓ Lower life expectancy[2]

1. Pandemic Learning Loss Could Cost U.S. Students $2 Trillion in Lifetime Earnings.
2. 10 Lessons from Past Educational Disruptions, and How They Can Help Students Make Up Lost Learning After COVID-19.

We compare estimates of the learning gaps to effect sizes of interventions...

High-dosage tutoring 3 x week for a year

↓

+19 weeks gains
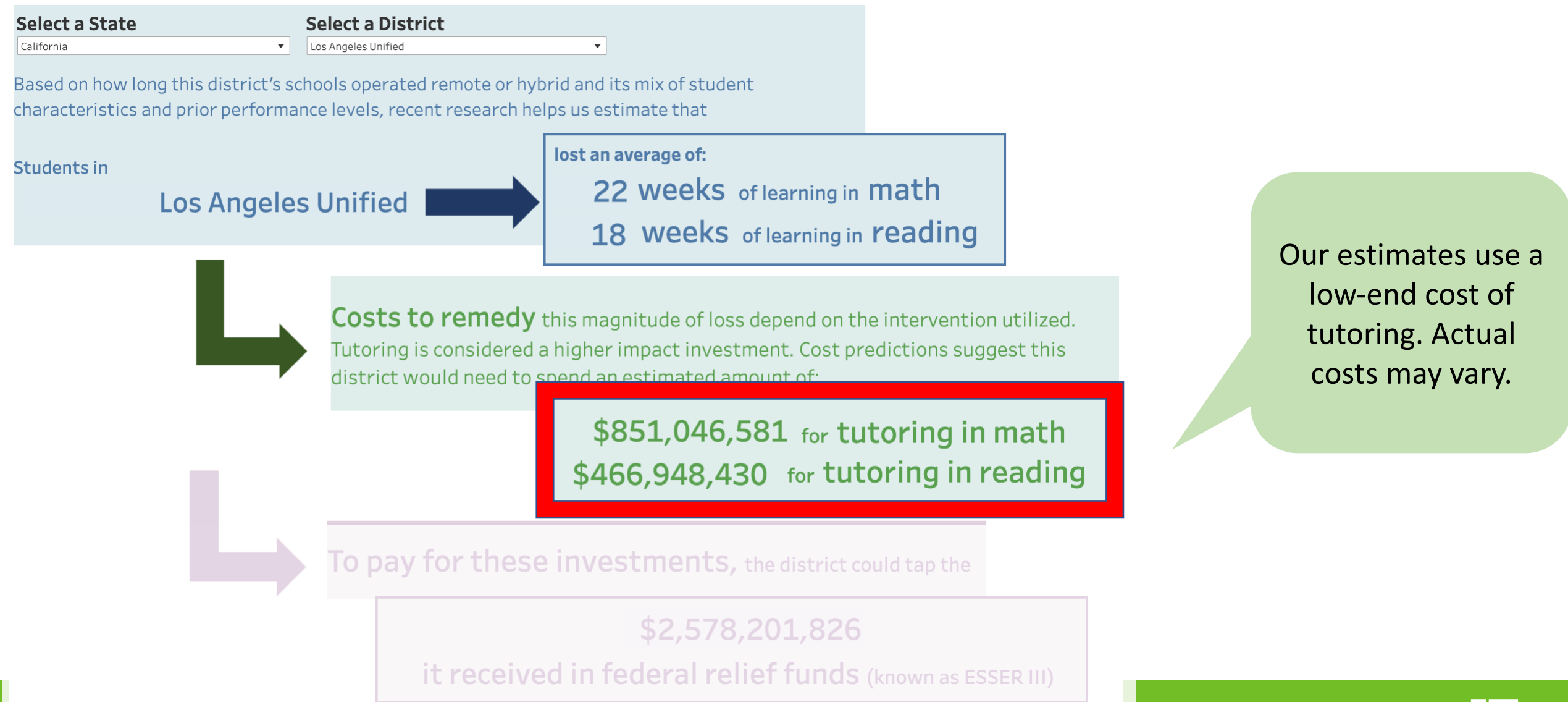
Double-dose of math each day for a year

↓

+10 weeks gains

Voluntary summer school

↓

+5 weeks gains

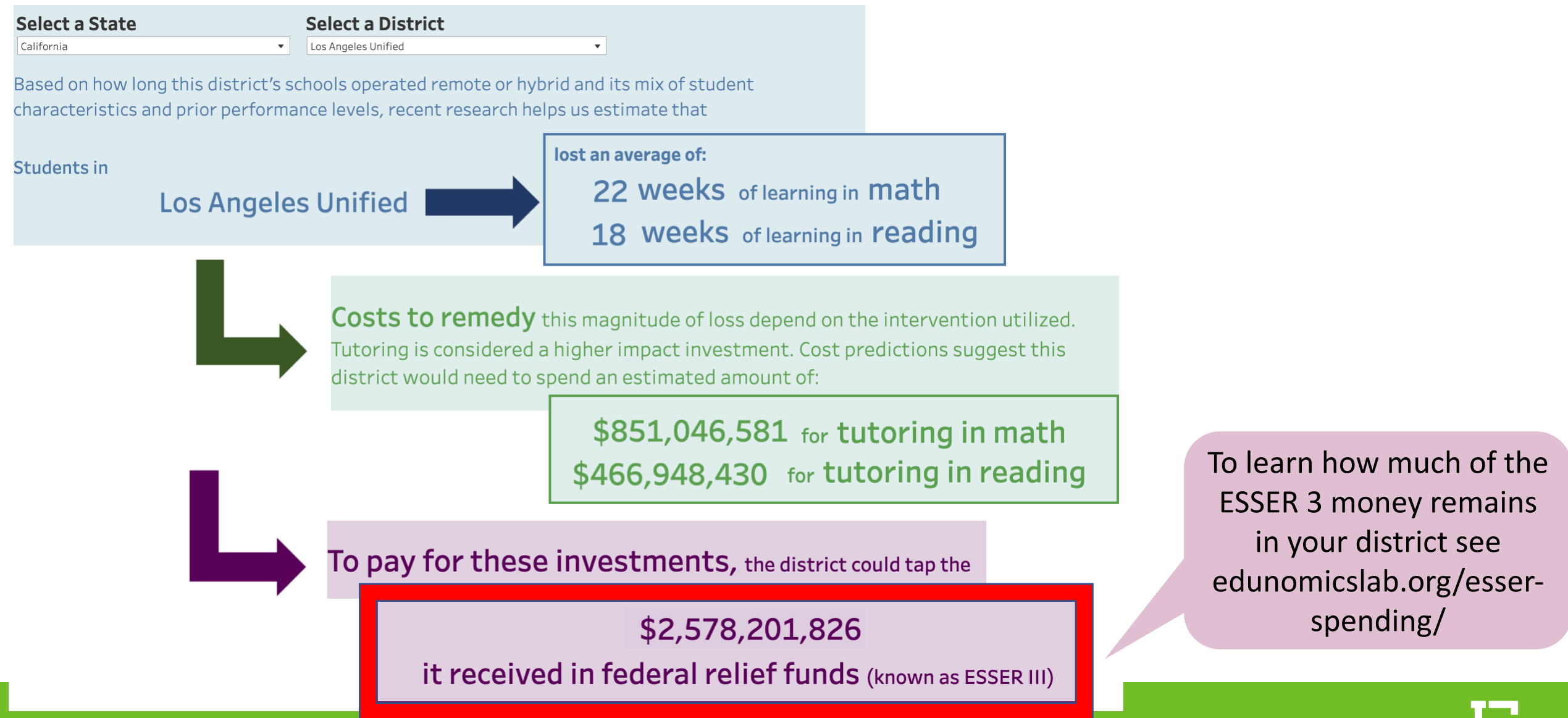# ... then compute district-by-district cost estimates for tutoring

Select a State

California ▼

Select a District

Los Angeles Unified ▼

Based on how long this district's schools operated remote or hybrid and its mix of student characteristics and prior performance levels, recent research helps us estimate that

Students in

Los Angeles Unified ➡️ **lost an average of:**

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Costs to remedy this magnitude of loss depend on the intervention utilized. Tutoring is considered a higher impact investment. Cost predictions suggest this district would need to spend an estimated amount of:

$851,046,581 for **tutoring in math**

$466,948,430 for **tutoring in reading**

Our estimates use a low-end cost of tutoring. Actual costs may vary.

To pay for these investments, the district could tap the

$2,578,201,826

it received in federal relief funds (known as ESSER III)

Most districts got federal funds to help with pandemic recovery

➢ The law requires districts to spend **20% of ESSER 3 money on making up for lost learning time**.

➢ At the time the the law was written, this percentage was just a guess at what was needed.

➢ Now we know that many districts will need to spend **far more than 20%** to catch their students up.

➢ Wealthier districts received less federal aid – those closed longer may need to spend some of their state/local funds to get students caught up.

https://edunomicslab.org/esser-spending/

We also list how much the district got in ESSER 3

Select a State

California ▾

Select a District

Los Angeles Unified ▾

Based on how long this district's schools operated remote or hybrid and its mix of student characteristics and prior performance levels, recent research helps us estimate that

Students in

Los Angeles Unified ➡

lost an average of:

22 weeks of learning in **math**

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To pay for these investments, the district could tap the

$2,578,201,826

it received in federal relief funds (known as ESSER III)

To learn how much of the ESSER 3 money remains in your district see edunomicslab.org/esser-spending/

Got questions?

I think our students are over/under performing these estimates.

Districts can consult their own data to see if their losses are greater (or less severe) than these estimates.

So if we spend this amount on tutoring, we're good?

Research hasn't studied interruptions of this magnitude. We suggest monitoring progress along the way.

My district is using the money to backfill budget gaps, not address learning.

We're hoping these data can help engage leaders and communities in these tradeoffs.

I don't see my district listed.

The calculator has data on over 8000 districts. We were unable to make estimates for districts with missing data elements.

Q&A

Note: Q&A is off the record unless otherwise stated

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Use "The Calculator" at Edunomicslab.org/calculator/
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Sign up for our newsletter at http://bit.ly/EdFiNews

Finance Fridays | School Board Member Edition

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