SpringMath Accelerate

Evidence for Intervention

Outcomes for equitable decision-making



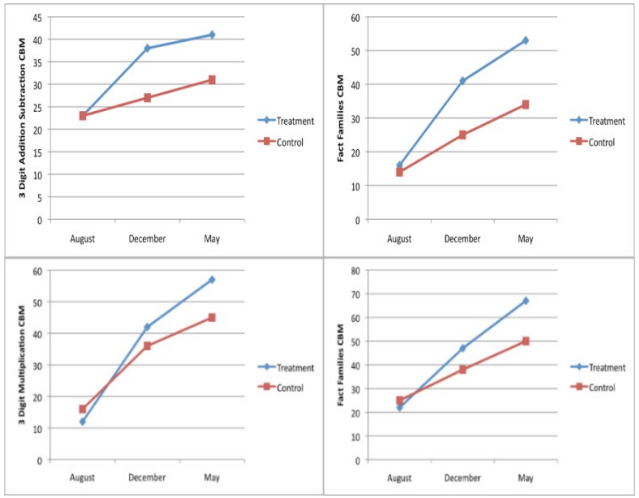
Evidence for Intervention

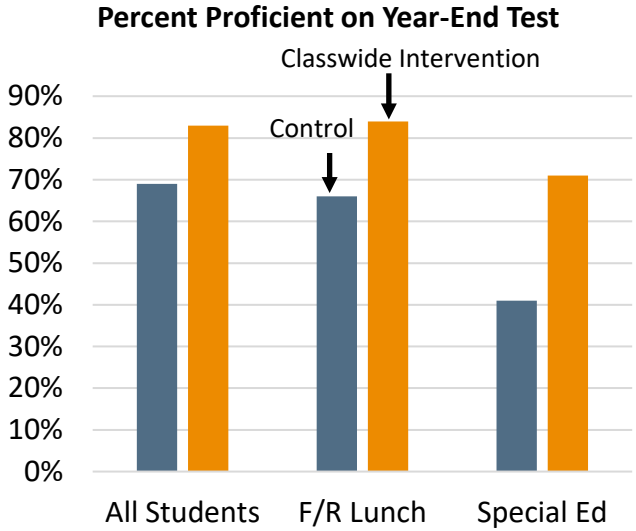
Dr. VanDerHeyden directed a districtwide randomized controlled trial with fourth- and fifth-grade students in 2012 to examine the effects of classwide intervention.

This study found:

- Strong gains on CBMs and moderate to strong gains on the year-end test scores at grade four.
- Gains were stronger for students who had greater risk at baseline and integrity accounted for treatment outcomes in the treatment groups.

Evidence for Intervention



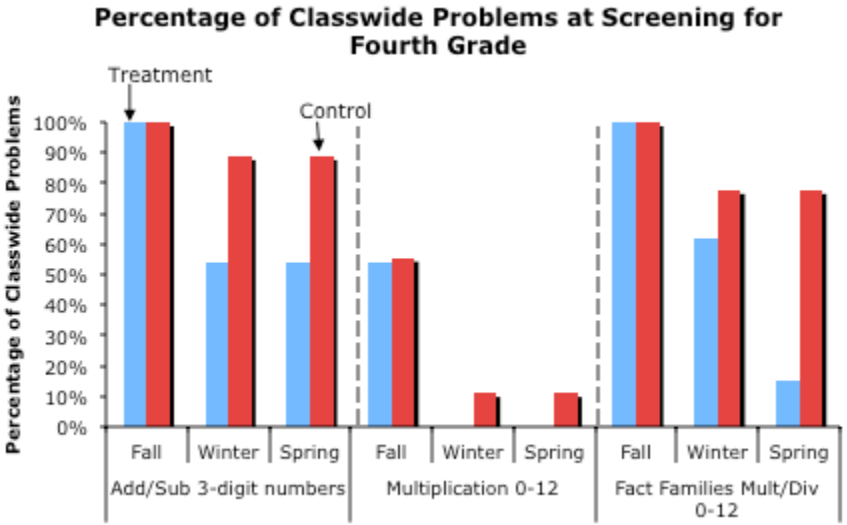


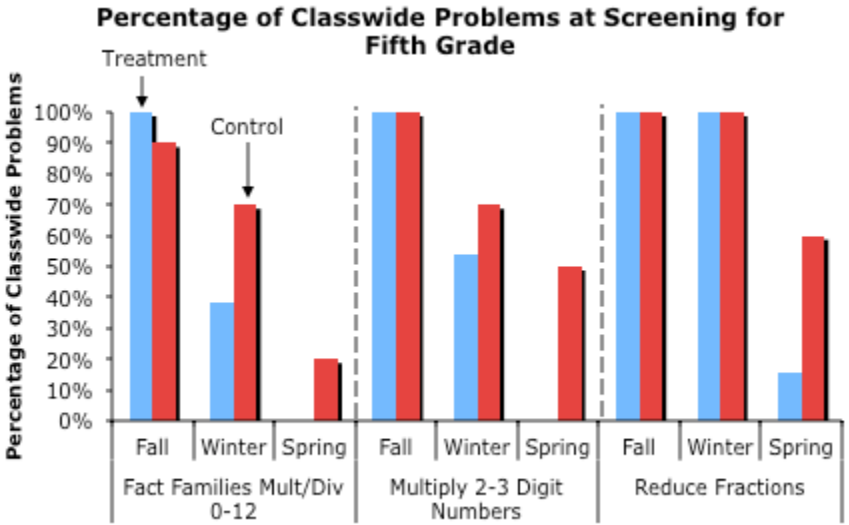
All	Title	Study	Study Type	Participants	Design	Fidelity of Impl.	Measures (Targeted)	Measures (Broader)
☐	Spring Math	Codding, VanDerHeyden, Martin, & Perrault (2016)	Group Design	●	◓	●	●	●
☐	Spring Math	VanDerHeyden, McLaughlin, Algina, & Snyder (2012)	Group Design	●	●	●	●	●

Median ES = .68 CBMs
ES = .18 Gr 4
ES = .66 for at-risk Gr 4
ES = .29 Number & Ops Gr 4
ES = 1.00 Number & Ops Gr 4

https://charts.intensiveintervention.org/aintervention (NCII)

Evidence for Intervention





VanDerHeyden, A. M., McLaughlin, T., Algina, J., & Snyder, P. (2012). Randomized evaluation of a supplemental grade-wide mathematics intervention. *American Education Research Journal*, 49, 1251-1284. https://doi.org/10.3102/0002831212462736

Evidence for Intervention

In a secondary analysis of the RCT data from the 2012 study, VanDerHeyden and Codding (2015) examined the intervention effects on risk reduction and equity in the fourth-grade sample.

They found:

- Very strong risk reduction for all students and especially pronounced risk reduction where risk was elevated at baseline
- For every 7 students who participated in classwide intervention, 1 of those students was prevented from failing the year-end test of math.
- For students who scored below the 25th percentile on the preceding year-end test, the number needed to treat was 2, meaning for every two students who scored below the 25th percentile on the preceding year-end test and received classwide math intervention in the current year, one of those students was prevented from failing the current-year's test.

Evidence for Intervention

	Absolute Risk Reduction	Number Needed to Treat
All students	15%	7
Students receiving Free/Reduced Lunch	18%	6
Students receiving Special Education Services	39%	3
Low-performing Students	44%	2

VanDerHeyden, A. M. & Codding, R. (2015). Practical effects of classwide mathematics intervention. *School Psychology Review, 44,* 169-190. doi: http://dx.doi.org/10.17105/spr-13-0087.1

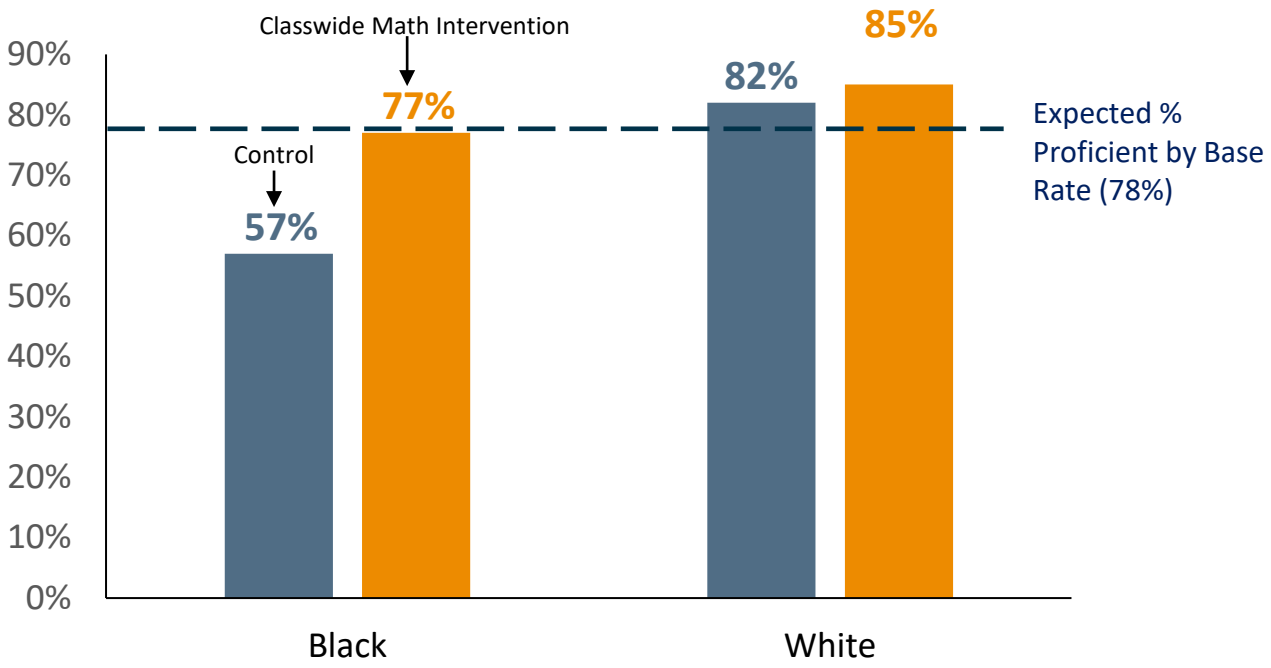
Evidence for Intervention

- Strong equity effects were also found, favoring intervention
- Achievement was disproportionate by race at baseline
- In the intervention classes, achievement was proportionate by race following intervention
- In the control classes, achievement remained disproportionate by race, with Black students performing much lower than white students
- Important, because race was comparably disproportionate in both control and intervention classrooms before intervention, this study provided experimental evidence that intervention produces equitable achievement



Evidence for Intervention

Percent Proficient by Race in Control & Intervention Groups



VanDerHeyden, A. M. & Codding, R. (2015). Practical effects of classwide mathematics intervention. *School Psychology Review, 44,* 169-190. doi: http://dx.doi.org/10.17105/spr-13-0087.1

Evidence for Intervention

- The SpringMath fall and winter screenings, and classwide intervention response data have been examined for bias and submitted to the NCII Tool's Chart.
- A series of binary logistic regression analyses were conducted for subgroups. Scoring below 20th percentile on AZ year-end test was the outcome criterion.
- Interaction terms were tested for each subgroup & screening scores for fall, winter, and classwide intervention.
- None of the interaction terms were significant at any grade level for sex, race, free or reduced lunch status, or special education status.
- These findings replicate all the earlier studies demonstrating screening and intervention is a more equitable basis for determining risk than teacher referral and other forms of assessment (i.e., year-end tests) alone.