



Heterogeneous Effects of Early Algebra across California Middle Schools

Background

- U.S. schools have been experimenting with different ways to intensify their math curriculum and improve outcomes.
- Between 1990 and 2015, the proportion of eighth graders in United States public schools enrolled in algebra or a more advanced mathematics course more than doubled to 44 percent.
- This increase was particularly pronounced in California.

Study Overview

- The paper uses a regression discontinuity design to estimate the impacts of early algebra on students' outcomes and heterogeneity across schools.

Key Takeaways

- The authors find that 8th grade algebra enrollment boosts students 9th grade advanced math enrollment by 30 percentage points and 11th grade advanced math enrollment is boosted by 16 percentage points.
- Tenth grade math scores are improved by 0.05 standard deviations.
- Women, students of color and English language learners benefit disproportionately from accelerated course work.
- Schools that set their 8th grade algebra eligibility thresholds higher than the baseline achievement distribution see substantially larger benefits for their students.

Learn More

- McEachin, A., Domina, T. and Penner, A. (2020), Heterogeneous Effects of Early Algebra across California Middle Schools. *J. Pol. Anal. Manage.* doi:10.1002/pam.22202
- <https://doi.org/10.1002/pam.22202>