

Special Education Substantially Improves Learning: Evidence from Three States

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POLICY ISSUE

More than one in seven U.S. students—approximately 7.5 million children—currently receive special education services. Enrollment rates in the three states examined in this study exceed the national average of 15%: roughly 17% of public school students in Connecticut, 18% in Indiana, and 20% in Massachusetts are enrolled in special education. Nationally, the number of students receiving services has grown by 20% since 2000-01, with comparable growth in each of these states. These individualized supports, governed by the Individuals with Disabilities Education Act (IDEA), on average cost roughly twice as much per pupil as general education and account for about one-third of federal appropriations to elementary and secondary education.

Given this scale of investment, a central question for policymakers is whether these services produce meaningful academic gains for the students they serve. Despite the importance of this question, causal evidence is limited. The central research challenge is that students are placed into special education precisely because they are struggling—making it difficult to separate the effect of services from pre-existing factors associated both with having a disability and later outcomes. This study addresses that challenge directly, using data from three states to estimate the causal effect of entering special education on student achievement.

STUDY DATA & FINDINGS

The study follows individual students over time using statewide records from Massachusetts, Indiana, and Connecticut, comparing each student's

KEY FINDINGS

½ to 1 year of additional learning
 gained within 3 years of receiving services, depending on grade level

3-5× larger
 than previous estimates of special education's impact on student achievement

CONSISTENT ACROSS

- ✓ 3 states
- ✓ 4 disability categories
- ✓ All racial & income groups
- ✓ Urban, suburban & rural schools

own academic trajectory before and after they first began receiving special education services. Students first placed into special education in grades 4 through 8 are included. The research design accounts for the fact that students tend to experience declining test scores in the years leading up to classification, likely because they are not yet receiving services they need to fully access instruction.

KEY FINDINGS

Consistent positive effects across all three states. Students in Massachusetts, Indiana, and Connecticut who are placed into special education services show a strikingly similar pattern: achievement declines in the years leading up to classification, then rises sharply after services begin. Within three years of initial classification, achievement is approximately 0.2–0.4 standard deviations higher than pre-classification trends would have predicted. This is a very large effect. To put this in concrete terms, these gains appear roughly equivalent to the average academic gains between third and fourth grade. At the higher end of the range (0.4 standard deviations), the gain is comparable in magnitude to well-regarded educational interventions such as high-dosage tutoring.

Effects are substantially larger than prior estimates. Earlier studies typically assumed students' outcomes would have remained flat absent services, leading to estimated effects of roughly one-quarter to one-half the size found here. By accounting for the downward trajectory in achievement that precedes placement into special education—and that would likely continue if the student did not start receiving services—this study finds that the productivity of public spending on individualized supports is higher than previously believed.

Gains are immediate and continue to grow over time. Achievement continues to improve as students continue to receive services in subsequent years. This pattern suggests that substantial and persistent returns can arise from tailoring instruction to diverse learning needs—much as evidence on tutoring and computer-assisted learning suggests that customizing instruction to individual students is among the most effective approaches available.

Gains reflect genuine learning, not testing accommodations. Massachusetts data include information on whether students received accommodations such as extended time or read-aloud on standardized tests. Accounting for exemption-use does not alter the estimated achievement effects, indicating that measured gains reflect genuine improvements in learning rather than artifacts of testing modifications.

Effects are broadly consistent across student subgroups and school settings. Positive achievement effects appear across disability categories (Specific Learning Disability, Emotional Disability, Other Health Impairment, and Speech/Language Disability), racial and socioeconomic groups, grade of initial placement, and type of residential setting. While effect magnitudes vary somewhat, differences across groups are rarely statistically distinguishable.

POLICY IMPLICATIONS

These findings provide evidence, replicated across three states and a range of student populations, that special education services are, on average, producing meaningful academic gains for students with disabilities. Several considerations are relevant for state and district policymakers:

The overall signal is encouraging. Several policymakers and researchers have raised concerns with whether special education “works.” This research suggests that placement into special education, on average, substantially improves student outcomes. The results are robust to a range of methodological choices and consistent across diverse contexts, strengthening confidence in their generalizability.

Identification timing merits continued attention. Because this study analyzes students first classified in grades 4 through 8, the findings do not speak to the effects of services for students identified earlier in their schooling. The evidence that students' achievement is already on a declining trajectory in the years before placed into special education raises questions about whether earlier identification might reduce the cumulative learning loss that precedes services. How timing of placement into special

education interacts with student outcomes is a question that warrants further attention from both researchers and practitioners. Further, the results do not necessarily hold for students who have more severe disabilities that most often are placed into special education earlier than the fourth grade.

Service design and alignment between supports and outcomes remain important considerations. While the study establishes that receiving services is associated with meaningful learning gains on average, it does not identify which specific components of services drive those gains. Policymakers and practitioners should consider the extent to which services are well-aligned to the academic outcomes most relevant to their students, and future research examining variation in service delivery models could help concentrate investments in the most effective approaches.

Administrative data is often an underutilized opportunity to monitor and improve special education at the state level. While states increasingly use longitudinal student records to evaluate broad education policies, this practice remains rare in the special education space—despite the scale of investment and the complexity of the popula-

tion served. State-level patterns in identification, service delivery, and outcomes can reveal where individualized supports are producing results at scale and where gaps between intent and impact exist. States that build the capacity to study their own special education systems—as Massachusetts, Indiana, and Connecticut have done here—are better positioned to identify what is working, for whom, and under what conditions, and to direct resources and policy attention accordingly.

ADDITIONAL RESOURCES

Ballis, B. & Heath, K. (2021). *The Long-Run Impacts of Special Education*. *American Economic Journal: Economic Policy*, 13(4): 72–111. This study uses policy variation in Texas to examine the longer-term consequences of withdrawing special education services, providing complementary evidence on the value of sustained support.

O’Hagan, K.G. & Stiefel, L. (2024). *Does Special Education Work? A Systematic Literature Review of Evidence from Administrative Data*. *Remedial and Special Education*. A recent systematic review of the broader literature on special education effectiveness, useful for situating this study within the existing evidence base.

CITATION

Coffey, S., Goodman, J., Schwartz, A. E., Stiefel, L., Winters, M. A., & Yoon, Y. H. (2026). *Special education substantially improves learning: Evidence from three states*. (Working Paper 2026-1). Wheelock Educational Policy Center. Available at wheelockpolicycenter.org.

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