

# The Power of Pre-K

Research brief summarizing work by O-Lab affiliate Christopher Walters (UC Berkeley), Guthrie Gray-Lobe (University of Chicago), and Parag Pathak (MIT)



## Background

A long body of research has demonstrated the profound impact that socioeconomic struggles faced in early childhood can have on one’s long-term well-being and quality of life. Accordingly, there is a critical need for strong evidence on what kinds of interventions at this stage are most effective in reducing inequality and improving long-term life outcomes. In the United States, one of the key interventions along these lines is the expansion of public preschool programs; as of August 2022, Universal Pre-K programs have been implemented by seven states and a number of large cities. However, there is limited evidence on the long-term impact of this policy: previous studies have measured only short-term effects, focused on small-scale preschool programs, or employed non-experimental methods, constraining their validity.

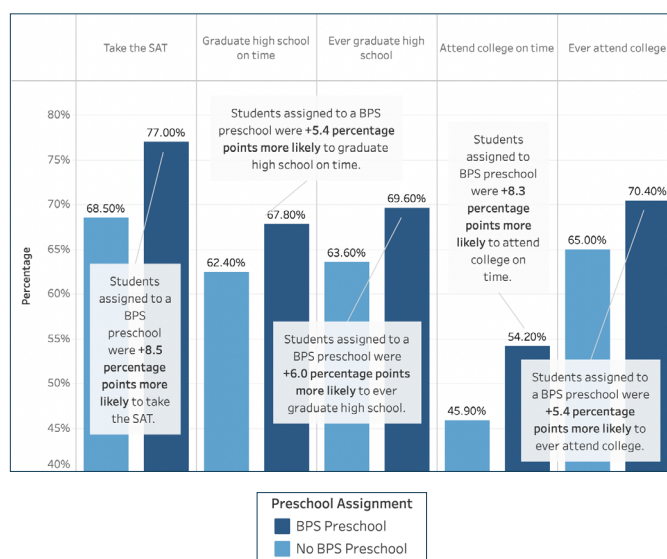
In response to this evidence gap, O-Lab affiliate Christopher Walters, along with colleagues Dr. Guthrie Gray-Lobe of the University of Chicago, and Parag Pathak of MIT, conducted the first study on the long-term effects of a large-scale preschool program that employs a randomized research design. Using data from over 4,000 4-year-old preschool applicants in Boston, the authors estimate the impact of preschool attendance on a range of short-term and long-term outcomes, including educational attainment and behavioral outcomes, high school graduation and college attendance, SAT-taking and state standardized test scores, and juvenile incarceration.

## Research Methods & Findings

In order to examine the effects of public preschool, the research team took advantage of Boston Public Schools’ (BPS) lottery model, which, after accounting for geographic proximity to a school and sibling attendance, randomly assigns equally “prioritized” 4-year-olds to either a BPS preschool

program, or to no program at all. This randomization ensures that any long-term differences that emerge between the two groups are a result of the preschool intervention, rather than other factors in their lives. By linking the preschool attendance records with data on pre-collegiate outcomes from the Massachusetts Department of Elementary and Secondary Education, and post-high school outcomes from the National Student Clearinghouse, the researchers were able to measure the relationship between preschool attendance and educational attainment.

**Figure 1: Impact of Preschool on Educational Attainment**



As Figure 1 above shows, the research team found that preschool attendance bolstered long-term educational attainment at both the high school and college level; students assigned to a BPS preschool were six percent more likely to graduate high school, and eight percent more likely to attend college on time.

*Students assigned to a BPS preschool were six percentage points more likely to graduate high school, and eight percentage points more likely to attend college on time.*

Moreover, BPS preschool students were more likely to take the SAT, further indicating intentions toward higher education.

Random assignment to a BPS preschool also had a positive impact in the short-term, improving behavioral outcomes by decreasing the likelihood of juvenile incarceration and the incidence of high school suspensions. However, researchers found that preschool attendance had no measurable effect on state standardized test scores, in the short term. This suggests that the mechanism through which pre-school impacts educational outcomes hinges on social and behavioral skill formation, rather than improved test scores or other standardized metrics.

Finally, the researchers also explored whether preschool attendance has a varying impact on student life outcomes, based on demographics — in particular, race, income, and gender. While findings suggested greater long-term advantages for boys than girls, the team found no evidence that the effect of preschool on life outcomes varies across different racial or income groups.

## Policy Implications

Walters and coauthors' research serves as a crucial new piece of evidence demonstrating the long-term returns on investments in early childhood. As the first randomized, large-scale study examining the long-term impacts of preschool attendance, their work suggests that expanding public preschool coverage in the US could have a profound impact on short-term behavioral outcomes and long-term educational attainment. This evidence demonstrating that students benefit from programs regardless of race or economic background should especially be considered by planners and policymakers.

## Resources

**MIT Blueprint Labs Discussion Paper:** “The Long-Term Effects of Universal Pre-K in Boston”

**New York Times Coverage:** “The Power of Pre-K”

**UC Berkeley Opportunity Lab:** Education & Child Development Research

**Faculty Website:** Christopher Walters

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