

Can Increased and More Equitable Education Funding Reduce Inequality in Adult Outcomes?

Summary of research by Rucker C. Johnson and C. Kirabo Jackson

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The educational achievement gap between children from poorer families and children from wealthier families begins very early. Over time, this gap widens and manifests in gaps in earnings, health and well-being, employment, and criminal justice involvement. Considering the consequence of these early gaps, the goal of finding effective approaches and investments to narrow them is a major educational and public policy priority. A new study by O-Lab affiliate Rucker Johnson and C. Kirabo Jackson offers an important contribution to that body of evidence. They examine how school spending--measured through the roll-out of Head Start and the variation in funding associated with the program--affected educational attainment and later-life success for those children who were exposed to the changes in funding at different ages.

The Research: Changes in Funding through Head Start and K-12

The federal Head Start program was established in 1964 as part of President Lyndon B. Johnson's "War on Poverty" with the goal of improving literacy, numeracy, reasoning, problem-solving, and decision-making skills for low-income children between the ages of 3 and 5. It includes meals, development screenings, access to pediatric care, and referrals to dental and mental health services. As of 2019, the program operates over 19,200 centers and serves more than 900,000 children at an average cost of \$8,700 per child.

In order to understand the effect of services and investments have on both educational outcomes and long-term outcomes in adulthood, Johnson and Jackson took advantage of the way Head Start was rolled out. Specifically, the fact that Head Start was implemented at different points in time in neighboring states, counties, and districts, allowed the researchers to compare trends in performance and outcomes for students who accessed the program at different ages and for different amounts of time. A student in one county, for example, may have had access to Head Start only age 4 and 5, while a student in the neighboring county had access for ages 3 through 5. And the fact that this staggered rollout occurred independent of other policy reforms means that it is possible to draw meaningful conclusions about the effects of the program by comparing similarly situated children in an example like this.

Along the same lines, their study also takes advantage of variation in funding for K-12 education that occurred as a result of court-ordered school finance reforms in 28 states between 1971 and 2010. In these cases too, education funding levels shifted dramatically and did so independent of other local policy-changes, which allows for a clean comparison between students in neighboring states who are similar in every way except for the age at which their school implemented reforms in response to a court order.

The specific focus of this research was to look at individuals born between 1950 and 1976 and track a range of their life outcomes through 2015 to determine how the level of school spending they were exposed to as a child affected their success in adulthood. They tracked not only educational outcomes such as high school graduation, but also other measures that indicate the life-long impact of education, such as earnings, poverty, and incarceration in adulthood.

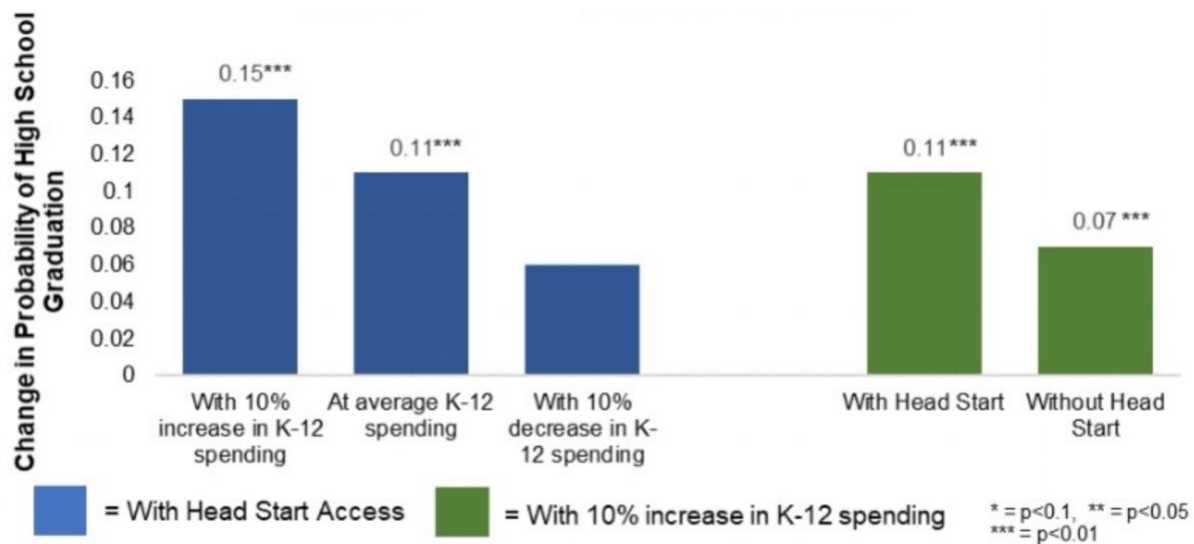
The Findings: Spending Effects Are Worth More Than the Sum of Their Parts

For poor children, increases in spending on both Head Start and K-12 education improved educational attainment and earnings, and reduced the likelihood of poverty and incarceration in adulthood. For non-poor children, Head Start funding increases had no effect. Importantly, however, the individual benefits of both Head Start and K-12 spending increased when poor children experienced the funding *in combination*. In other words, Head Start funding was more effective when students also attended K-12 schools with increased funding: an increase in Head Start spending was more than twice as effective at improving outcomes for students attending K-12 school districts that spent at the 75th percentile than those attending districts that spent at the 25th percentile.

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Moreover, the long-run effects of Head Start were small when children subsequently attended poorly funded K-12 schools. And vice versa: K-12 funding was more effective when students had access to Head Start funding. While the effects of K-12 spending increases were small when not preceded by Head Start spending, the same 10% increase in K-12 spending with Head Start access at age four led to a 11 percentage-point increase in the likelihood of graduating high school. This complementary relationship between Head Start and K-12 funding held true across all adult outcomes observed, indicating that a 20 percent increase in school spending is large enough to reduce gaps in outcomes between poor and non-poor children by at least two-thirds.

Figure 1: Interactive Effects of Head Start & K-12 Spending On Likelihood of Graduating from High School: Poor Children



Policy Implications

Though there have been many changes in the education landscape since the individuals in this study were children, access to quality schools has never been more important, as the returns to education have increased over time. This important research indicates that sustained educational investments from preschool onward are key to improving outcomes. Rather than viewing educational spending as a zero-sum game, in which spending on any one program reduces available funding for others, it is key for policymakers to consider preschool and K-12 spending as complementary efforts, recognizing that the total effect is greater than the sum of the investments in isolation.

Improving educational funding in combination across preschool and K-12 programs can successfully and cost-effectively break the cycle of poverty.

As policymakers across the country consider state investments in preschool programs, this work provides critical new evidence about the effectiveness of these programs. While past studies on preschool spending have shown inconsistent evidence on the long-term effects, this may not be truly reflective of the effectiveness of preschool programs. Rather, it may indicate the opportunity that is lost when children who are given access to quality preschool education go on to attend underfunded K-12 schools.

While there is currently significant interest in model preschool programs, this work shows that spending on Head Start can have significant positive impacts at much lower costs. Ultimately, improving educational funding in combination across both preschool and K-12 programs can successfully, and cost-effectively, break the cycle of poverty.