Short-run Fade-out in Head Start and Implications for Long-run Effectiveness

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At the core of debates about Head Start is evidence of its effectiveness, which has been questioned due to the reduction in test score gains, known as test score “fade-out”, in the years following participation. However, short-term test score gains may not accurately reflect the impacts of the program. A number of studies suggest that the program yields long-term improvements that include social, cognitive and physical well-being. These findings show that, overall, Head Start produces a positive return on investment.

Annually, almost 900,000 children aged 3-5 participate in Head Start, the mainstay public pre-Kindergarten program in the U.S. It serves children who are disproportionately poor, disabled, from racial and ethnic minority groups or living in non-English speaking households with a FY 2014 budget of about $8.6 billion.

Head Start’s effectiveness has been questioned based on the apparent impermanence of children’s cognitive gains, first documented months after its inception in 1965. A group of 179 New York City Head Start children were found to have test scores that were not statistically distinguishable from their non-Head Start classmates by kindergarten.

In 1969 the Westinghouse Learning Corporation undertook a comprehensive nationwide study of the program. Participants in the year-round program showed cognitive gains immediately, but their edge faded in second and third grade. However, concerns regarding the comparability of children in the control group left questions regarding whether the results reflected the true effect of the program.

Randomized Trial

The 2002 National Head Start Impact Study (HSIS) was a large-scale randomized control trial that involved 4,667 children. The study used a lottery to allocate immediate enrollment in Head Start, while children in the control group were allowed to stay in parental care or to enroll in non-Head Start programs. The randomized research design made any measured difference between the groups attributable to Head Start.

The study found that children given immediate access performed a statistically significant 0.1-0.2 standard deviations better on cognitive measures, and had better behavior and home environments. However, the gap in cognitive measures diminished, leaving little evidence of its impact by the end of first grade. The study was unable to find conclusive evidence of impacts on socio-emotional measures or health outcomes through first grade, though it did find evidence of increases in health insurance coverage through Kindergarten and first grade.

Secondary analyses of HSIS data has revealed interesting variability in impacts. One study found larger impacts among lower-achieving children, and more persistent gains among Hispanic children. Another study found that some centers, especially full-day programs, were more effective at producing gains that do not fade out.

Quasi-experimental Design

Other studies which use a variety of “quasi-
Fade-out and Long-term Effects

Test score fade-out is not necessarily inconsistent with overall gains in other areas such as health and home environments. Research has documented test score fade-out among the same cohorts that later show long-term improvements in other measures, which means that a similar pattern of fade-out and future improvement may also be true for children currently in Head Start.

If fade-out is consistent across groups of children starting the program in different years, it suggests that the long-term improvements identified in research on earlier cohorts of children may not be discounted as being unique to an earlier and more effective version of Head Start.

Other programs also show a similar pattern. Children who attend Perry Preschool, a well-regarded preschool intervention, also has test score fade-out. Reductions in kindergarten class size have this feature as well. Additionally, a recent study on housing vouchers found substantive long-run gains for young children, despite earlier studies finding no short-run impacts.

Positive spillovers from Head Start children may also reduce the program’s measured effects. If Head Start children are more advanced when they enter kindergarten, schools may divert resources to their less-prepared peers. As those peers catch up, the visible benefits of Head Start would diminish.

What is the right outcome measure?

Test scores may not reflect the main benefits of Head Start participation. Important and lasting improvements in health, behavior and executive control, for example, may not be captured in these scores. This is consistent with studies that find that health gains from Head Start persist from pre-school onwards. Documented increases in parental involvement may facilitate these health outcomes as well as other improvements in as yet unmeasured areas.

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6 These use non-experimental variation to replicate experimental conditions. Researchers argue that these estimates of causal effects are highly credible. In practice, credibility varies depending on how close the study conditions are to an experiment.


