

INVEST IN A STRONG START FOR CHILDREN.

AppleTree

Problem

Many vulnerable, low-income children lack access to high-quality early childcare or preschool programs.¹ Yet, a strong body of research shows that evidence-based programs can improve the trajectory of disadvantaged young children's education, health, economic, and life outcomes, while significantly reducing the use of social services.²

Solution

Increase the quality of existing early learning programs by promoting the development and adoption of comprehensive, evidence-based instructional models that improve young children's language, literacy, numeracy, and socio-emotional skills.

High Impact Opportunity

Every Child Ready is a preschool instructional model developed by **AppleTree Institute for Education Innovation (AppleTree)** based in Washington, D.C. *Every Child Ready* is designed to close the achievement gap between “at-risk” three- and four-year-old children and their more advantaged peers. The model is unusual in that it not only provides a comprehensive approach for teaching preschoolers, but it is also rigorous in measuring outcomes. AppleTree opened its first preschool in 2005 and spent six years developing the *Every Child Ready* model that officially debuted in 2011. As of 2015-16, AppleTree educates 825 children at eight preschools in high-need neighborhoods, and has rolled out the *Every Child Ready* model to more than 50 public preschool classrooms throughout the District of Columbia, reaching over 1,004 additional children at 9 partner schools and community-based organizations.

How it Works

Developed and tested with support of a highly selective federal [Investing in Innovation](#) (i3) grant, *Every Child Ready* draws from existing research on effective early childhood education as well as AppleTree's own on-the-ground experience in running preschools for children from low-income families.³ The model's comprehensive approach provides a thematic preschool curriculum as well

as resources to improve instruction, coaching, teacher professional development, and assessment. There are three main components:

- **What to teach:** The Curriculum has 10 thematic units designed to meet the learning needs of three- and four-year-olds. Each unit covers topics like family and community, color and art, earth science, or space and astronomy, and is aligned to both the [Common Core](#) and DC Early Learning standards.
- **How to teach:** The “Attributes Framework” provides teachers with checklists and resources to support including evidence-based instructional practices in each of their lessons (e.g. a community building activity, language support strategies, or behavior management strategies).
- **How to tell it’s being done:** The “Quality Indicator Observational Tool” helps teachers and preschool leaders translate classroom quality data into practical feedback to improve teaching quality. Using this tool, teachers can identify their strengths and weaknesses, better preparing them to select appropriate professional development workshops and use one-on-one coaching to improve their teaching. AppleTree has also developed progress monitoring tools for critical skills: *Every Child Ready Language and Literacy*, *Every Child Ready Math*, and the *Positive Behaviors Rating Scale*.

Every Child Ready also encourages preschool operators to consider the following operational recommendations from leading experts in early childhood education:

- Recruit lead teachers with at least a bachelor’s degree and prior classroom experience;
- Maintain low child-to-teacher ratios, ranging from 5:1 to 10:1, which increases the likelihood of positive adult-child interactions;⁴
- Operate full-day programs from 8:00 am to 3:15 pm, with time for naps and outdoor play;⁵
- Provide screening and support services for children, including availability of social workers;
- Provide at least two meals per day (particularly important for children coming from food-insecure households, who may arrive hungry).



Image provided by AppleTree

What's the Impact?

Exposure to the *Every Child Ready* model diminishes the achievement gap in early vocabulary, literacy, and math skills for at-risk children in AppleTree schools according to data from AppleTree's 2011-2013 i3 evaluation study. Ninety percent of these children completed preschool scoring within "normal" ranges on commonly used tests of key language, vocabulary, or literacy skills and, as a result, are much less likely to be assigned to special education or held back a grade level. A study of AppleTree alumni conducted just before *Every Child Ready's* official rollout in 2011 found that AppleTree graduates in the early grades of district public schools were performing as well or better on average than their peers on common literacy measures. In the long term, according to other longitudinal studies, early success in these areas has been linked to lower rates of high-school dropout, behavior issues, crime, and unemployment, among other outcomes.

Near-term impacts: All children attending AppleTree preschools, regardless of family income levels, advance their learning and skills leading up to kindergarten. At-risk students in particular, however, show greater rates of growth in literacy and math skills after participating in *Every Child Ready*, performing close to national averages on commonly used tests upon completing the program. For example, even children who come from low income or non-English speaking households and who also had low initial baseline assessment scores⁶ complete Pre-K with scores close to the national average for performance on the Peabody Picture Vocabulary Test (PPVT), an early literacy measure that assesses a student's vocabulary. The mean for at-risk, low baseline students completing the program was 97.10 while the national mean is 100.7. Scoring at or near the national mean is notable, given studies that show that children with multiple risk factors can score as low as 59.7 on the PPVT.⁸

Mid-term impacts: The 2011 study of 100 AppleTree alumni suggests that graduates are performing on average as well as or better than their peers once they enter elementary school.⁹ Based on scores from early literacy tests administered by District of Columbia Public Schools (DCPS), AppleTree alumni on average enter kindergarten with stronger letter recognition skills than the average DCPS student, and maintain that gain throughout the year. AppleTree graduates also showed stronger oral reading skills in first grade than the average DCPS student, scoring almost 30% higher. The sample size for 2nd grade was too small to draw firm conclusions, but there was no evidence of a “fade-out” effect: AppleTree students did not appear to lose their advantage in oral reading skills.

Long-term impacts: Robust research of similar high-quality preschool programs has demonstrated that they reduce the need for special education services, lower grade retention, improve high-school completion rates, lower the likelihood of involvement with the justice system, and positively affect earnings and health outcomes.¹⁰

Because the *Every Child Ready* instructional model is fairly new, evidence of this specific program’s long-term impact has not been measured through a longitudinal study. AppleTree’s initial success, however, has attracted the attention of peer schools, researchers, and funders: In 2012, New Schools Venture Fund selected *Every Child Ready* as a “turnaround strategy” for improving preschool programs in several other Washington, DC-based schools. While it is difficult to isolate the impact of the model in these additional schools without a robust evaluation, the data appear to point in the right direction: other schools and learning centers that have implemented the full *Every Child Ready* model also show positive growth rates in children’s learning.

What Does it Cost to Implement?

There are two main avenues for supporting the implementation and growth of the *Every Child Ready* model, both of which can increase access to high-quality early learning opportunities for at-risk children:

AppleTree Institute: Funders can help underwrite AppleTree Institute’s implementation of *Every Child Ready* within their Washington D.C. charter preschools. It costs about \$35,000 to educate a disadvantaged preschool child for two years using the *Every Child Ready* model in AppleTree-run schools. Much of this cost is covered by the per-pupil funding allocation from the school district, DCPS. In the 2014-15 school year, for example, DC allocated \$15,400 and \$15,700 per three and four-year-old student to charter preschools (including AppleTree schools). The cost gap - ranging from \$3,600 to \$4,200 per pupil - is filled by philanthropy. Funding AppleTree directly also supports ongoing research, development, and evaluation of the *Every Child Ready* model.¹¹ Currently, AppleTree Institute is keenly interested in conducting a third-party evaluation of *Every Child Ready*’s effect on children’s third grade reading and math scores.

Non-AppleTree Schools: Alternatively, funders can help bring *Every Child Ready* to preschools outside the AppleTree network, including those operated by public school districts, community based organizations and charter schools. Implementation costs for *Every Child Ready* in this context vary depending on school size and the degree to which the school will need to supplement or upgrade its basic level of staffing and resources. AppleTree offers a set-up package of *Every Child Ready* books, supplies and online services for \$5,000 for a classroom of 20 to 25 children. In subsequent years, the cost is \$2,500 per classroom and includes the curriculum, assessment and reporting, and year-round support for professional development. These costs should be considered minimums, however, as schools also may need to purchase other books and materials, as well as technology (such as tablets), from third-party vendors to make full use of *Every Child Ready*. It is also important to note that, in order to implement the model with fidelity, a preschool's costs can increase to accommodate the operational recommendations mentioned previously (e.g. hiring lead teachers with a bachelor's degree, providing full-day programs, etc.).

Cost per Impact

A philanthropic investment of approximately \$3,600 to \$4,200 provides an at-risk child with two years of exposure to the *Every Child Ready* model within AppleTree's own schools.

Representative impacts:

- Near-term: By the time they have finished the two-year program, students who begin *Every Child Ready* at AppleTree with a low baseline on assessments score at or very close to the national mean on tests of early literacy, vocabulary and math skills. Children scoring normally on these tests are less likely to be assigned to special education for cognitive deficits. As of 2015, DC Public Schools reports having 18% of their student body assigned to special education, at an additional cost of \$9,207-\$33,127 per student over the normal per-pupil expenditure;
- Mid-term: A 2011 study showed that AppleTree's graduates scored at grade level in early elementary school; their early literacy skills were better on average than the average DC public school student.
- Long-term: Based on evidence from similar high-quality early childhood programs, AppleTree students may see an increase in school achievement and income, better health, and a decrease in unemployment.

For more information on the Center's approach to calculating cost per impact, click [here](#).

Take Action

Donors can support AppleTree directly, or can support the adoption and further evaluation of the *Every Child Ready* model in additional partner schools. Donors interested in further rigorous evaluation of whether the adoption of instructional packages such as *Every Child Ready* can improve the quality of existing preschool programming can also contact New Profit ([link](#)), which is helping to coordinate donors interested in this approach.

SNAPSHOT

CORE PRACTICE: Increase the quality of existing early learning programs through the development and adoption of Every Child Ready, a comprehensive and evidence-based instructional model that improves young children's language, literacy, numeracy and social-emotional skills.

TARGETED BENEFICIARIES: Low income 3 and 4 year old children enrolled in preschool;

IMPACT ACHIEVED: Program diminishes achievement gap for at-risk children, who finish preschool close to national averages on early vocabulary and other school readiness measures.

COST/IMPACT OR COST-BENEFIT: For a philanthropic investment of about \$3,600 to \$4,200 per child for the two-year program, children within AppleTree's own schools score at or close to national averages on early vocabulary and other tests of kindergarten readiness. Moreover, AppleTree graduates appear to score as well or better than peers on early literacy tests in early elementary grades. Costs and impacts of implementation of the Every Child Ready model in other preschool settings may vary.

¹ See: A Matter of Equity: Preschool in America. U.S. Department of Education, 2015 (retrieved: 11/19/15 at: <http://www2.ed.gov/documents/early-learning/matter-equity-preschool-america.pdf> Also: Nores, M., & Barnett, W.S. (2014). Access to High Quality Early Care and Education: Readiness and Opportunity Gaps in America (CEELO Policy Report). New Brunswick, NJ: Center on Enhancing Early Learning Outcomes.

² Two notable examples are the Abecedarian project and the Perry preschool project.

³ Because AppleTree's preschools are technically charters, they cannot select children based on income levels (there is a lottery). Because their schools are located in predominantly low-income areas, however, the percentage of children receiving free or reduced lunch (an indicator commonly used as a stand-in for low income) hovers around 80%. Also, approximately 38% of their children do not speak English as a first language (ELLs).

⁴ Note: Studies show that it is the quality of interaction between children and adults that produces positive outcomes for children. While a low teacher-child ration does not guarantee quality, it is a facilitating condition, as teachers have more time for one-on-one interaction. See: Yoshikawa, Weiland et al Investing in Our Future: The Evidence Base for Preschool Education. Society for Research in Child Development, October 2013. at <http://fcd-us.org/sites/default/files/Evidence%20Base%20on%20Preschool%20Education%20FINAL.pdf>

⁵ Note that while increased dosage (time in care) is associated with better cognitive/academic outcomes for children at high quality centers, the same is not true for low quality care. See: Zazlow, Anderson et. al: Quality, Dosage, Thresholds, and Features in Early Childhood Settings. HHS, 2010. http://www.acf.hhs.gov/sites/default/files/opre/quality_review_0.pdf The importance of both rest and play is also well documented. See, for example: <http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/eecd/nature-based-learning/Benefits%20of%20Nature%20and%20Outdoor%20Play/outdoor-play-benefits.pdf>, <http://www.pnas.org/content/110/43/17267.abstract>

⁶ At or under mean of 85.

⁷ Students scoring low on baseline assessments of the PVVT increased scores by just under 30% by the end of the program.

⁸ For example, a study in in Memphis, TN demonstrated that preschool age children with no risk factors on average achieved close to the national mean on the PPVT (a score of 100), while scores dropped dramatically for children with multiple risk factors. Burchinal, M., Vandergrift, N., Pianta, R., & Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, 25(2), 166-176. Retrieved 2/08/14 from: <http://www.urbanchildinstitute.org/key-initiatives/data-book/2013/education>

⁹ AppleTree Institute for Education Innovation: "Every Child Ready: Expanding Opportunity for Washington, D.C.'s Young People." HCM Strategies, 2011

¹⁰ See, for example, results from the Perry Preschool program (link to: <http://www.highscope.org/content.asp?contentid=219>) and the CPC program also profiled in this toolkit (link).

¹¹ For example, AppleTree has raised \$3.5 million from The Stranahan Foundation, Venture Philanthropy Partners, New Schools Venture Fund, The Marriott Foundation and The Martin Family Foundation to put Every Child Ready onto a technology platform so it is truly scalable and easier to use.

¹² AppleTree does not at this point have the tracking information to know what percent of their graduates have been assigned to special education, although they do know that less than 5% have been retained. Information on cost supplements for DC special education is available at: <http://www.dcfpi.org/wp-content/uploads/2015/03/Revised-School-Primer-March2015-FINAL.pdf>; percentage of special education assignments is available at the DC public schools website: <http://dcps.dc.gov/node/966292> Range in per-pupil special education supplements reflect higher degree of need for support while in school.



3815 Walnut Street
Philadelphia, PA 19104

WEBSITE www.impact.upenn.edu
EMAIL impact@sp2.upenn.edu
PHONE (215) 573-7266

Copyright © 2015 Center for High Impact Philanthropy