

# SEEDS OF ACHIEVEMENT: APPLETREE'S EARLY CHILDHOOD D.C. CHARTER SCHOOLS

*by Cara Stillings Candal*

*Foreword by Sara Mead*



**PIONEER INSTITUTE**  
PUBLIC POLICY RESEARCH

**White Paper No. 120**  
July 2014

## PIONEER'S MISSION

Pioneer Institute is an independent, non-partisan, privately funded research organization that seeks to improve the quality of life in Massachusetts through civic discourse and intellectually rigorous, data-driven public policy solutions based on free market principles, individual liberty and responsibility, and the ideal of effective, limited and accountable government.



**This paper is a publication of the Center for School Reform**, which seeks to increase the education options available to parents and students, drive system-wide reform, and ensure accountability in public education. The Center's work builds on Pioneer's legacy as a recognized leader in the charter public school movement, and as a champion of greater academic rigor in Massachusetts' elementary and secondary schools. Current initiatives promote choice and competition, school-based management, and enhanced academic performance in public schools.



**The Center for Better Government** seeks limited, accountable government by promoting competitive delivery of public services, elimination of unnecessary regulation, and a focus on core government functions. Current initiatives promote reform of how the state builds, manages, repairs and finances its transportation assets as well as public employee benefit reform.



**The Center for Economic Opportunity** seeks to keep Massachusetts competitive by promoting a healthy business climate, transparent regulation, small business creation in urban areas and sound environmental and development policy. Current initiatives promote market reforms to increase the supply of affordable housing, reduce the cost of doing business, and revitalize urban areas.



**The Center for Health Care Solutions** seeks to refocus the Massachusetts conversation about health care costs away from government-imposed interventions, toward market-based reforms. Current initiatives include driving public discourse on Medicaid; presenting a strong consumer perspective as the state considers a dramatic overhaul of the health care payment process; and supporting thoughtful tort reforms.

## TABLE OF CONTENTS

Foreword	5
Executive Summary	7
Introduction	9
The Impact of Early Childhood Education and the Status Quo	11
AppleTree Early Learning: A Case Study in Quality	14
Student Outcomes	19
Bringing the Model to Scale	23
Conclusion and Recommendations	25
About the Authors	27
Endnotes	28



## FOREWORD

by Sara Mead

Over the past decade, I have been fortunate to observe and work with AppleTree Early Learning Public Charter School in a variety of ways—first as an outside analyst writing about pre-k policies and the growth of charter schools in the nation's capital, then as a member of the AELPCS board, and for the past 5 years as a member of the District of Columbia Public Charter School Board, which authorizes charter schools in Washington, D.C. Through these experiences, I have come to appreciate both AppleTree's incredible work to close the school readiness gap for our city's most at-risk youngsters and the unique policy conditions in the District of Columbia that make this work possible. This appreciation has fundamentally shaped my perspectives and work as an analyst of national early childhood policy issues. I sincerely hope that this new Pioneer Institute report profiling AppleTree's work will similarly shape the work of federal, state, and local policymakers and advocates who seek to expand low-income children's access to high-quality preschool programs.

AppleTree's story demonstrates the potential of high-quality preschool. It also illustrates the difficulty of realizing that potential. As this paper describes, AppleTree didn't achieve a high-quality program or strong outcomes by chance. Its quality and outcomes result from highly intentional and research-based decisions about every aspect of program design—from curriculum, to assessment, to teacher support and professional development—coupled with high-quality execution.

This intentionality is lacking both in many preschool programs and in the current public policy debate about preschool. At the programmatic level, too many of our nation's preschool and early childhood programs hire under-prepared teachers, give them broad curricular "frameworks" that offer little guidance in structuring children's day-to-day learning experiences, provide only haphazard teacher support and professional development, and

make little effort to assess the impact of program practices on children's learning or kindergarten readiness.

Public policy debates about early childhood education tend to focus primarily on questions of funding and access. These are critical issues—adequate funding has been an essential enabling condition for AppleTree's success. But adequately funding alone does not enough to ensure preschool quality. To realize the potential of preschool, policymakers must also put in place thoughtfully designed quality standards, performance monitoring, and support infrastructure to ensure that preschool programs use high-quality, intentional, and research-based practices that enable young children to master essential language, early literacy, early math, and social-emotional skills.

AppleTree's founders, leaders, and teachers deserve tremendous credit for the high-quality preschool programs they have created. But policy conditions in the District of Columbia also contribute to AppleTree's success. Generous pre-k funding in the District—more than \$13,000 per child in FY2014—enables AppleTree to pay competitive salaries for bachelor's degreed teachers; to have two degreed teachers and one assistant in each classroom; and to provide extensive coaching, professional development, and support to teachers. The District of Columbia's robust charter policies also make AppleTree's work possible. The District is unique in allowing charter schools both to serve preschool students and to receive full per-pupil funding for preschoolers. This approach creates a straightforward path for new preschool providers—such as AppleTree in 2004—to enter the market and secure public funding for preschool. It also enables K-12 charter schools to serve preschool students, aligning preschool and the elementary grades to create a seamless early learning experience. As states seek to expand access to quality preschool programs, they should consider replicating the District of Columbia's policies to fuel the growth of high-quality charter preschools.

In most states, preschool quality is measured primarily through input measures—such as teacher education, class size, or implementation of specific parent engagement activities—rather than measures of classroom instruction or children’s learning outcomes. In contrast, the District of Columbia Public Charter School Board’s early childhood Performance Management Framework (PMF) combines developmentally appropriate, school-selected measures of children’s learning with valid and reliable observations of teacher-child interactions. Research shows that teacher-child interactions are the most important factor in preschool quality, and that children learn more in classrooms with high-quality teacher-child interactions. By including multiple indicators in the early childhood PMF, DCPCSB maintains a focus on student learning while ensuring that decisions about charter preschools’ performance are not based on child assessments alone. This approach also allows DCPCSB to hold preschool programs accountable for the quality of services they provide while respecting their autonomy and avoiding the burdensome input requirements imposed by many public preschool and Head Start programs. Eventually, DCPCSB will be able to use PMF information to strengthen the quality of preschool charters, identifying high performers so that others can learn from them, and identifying improvement needs in low-performing charter preschools.

As DCPCSB seeks to raise standards for preschool quality across the charter sector, AppleTree’s work is helping other charter preschools reach these higher standards. Through partnerships with both charter schools and non-charter preschools, AppleTree supports other preschool programs to implement AppleTree’s Every Child Ready curriculum and improve teaching quality. The results of these early partnerships are promising.

I am proud that the District of Columbia leads the nation in the percentage of both 3- and 4-year-old children enrolled in publicly funded preschool. For a city that once ranked at the bottom on national measures of K-12 student achievement, it’s a welcome change to come in first on any

education measure. Widespread access to preschool has also contributed to improving the District of Columbia’s K-12 education outcomes over the past seven years.

Despite this recent progress, much work remains to improve the performance of both charter and DCPS schools and to ensure that all D.C. children get a good education. Preschool alone cannot solve all the education challenges in the District of Columbia, but it can play an important role. I have personally seen the benefits preschool programs offer to families and children from a variety of backgrounds—helping to narrow school readiness gaps and place low-income children on a solid foundation for school success and encouraging more middle class families to stay in the District’s public schools. Both outcomes are critical to the long-term success and health of our city and its public education system.

AppleTree Early Learning Charter School makes high-quality preschool available to hundreds of District of Columbia children and, through partnerships, is improving preschool quality for children beyond the schools it operates directly. The lessons in this paper can help both early childhood practitioners and policymakers to learn from AppleTree’s example, as well as the District of Columbia policies that have enabled it to flourish.

## EXECUTIVE SUMMARY

Although early childhood education has been on the federal agenda since the 1960s and President Johnson's *War on Poverty*, a renewed focus on the value of high-quality early childhood programming, in the form of President Obama's *Preschool for All* initiative, has thrust the issue of universal preschool back into the spotlight.

Longitudinal research shows that high-quality preschool can make a difference: it closes achievement gaps and improves life outcomes for participants. Not all early childhood programming is created equally, however. Preschools with an academic emphasis, which have not been widely available to students and families that rely on federal funding, are central to closing the achievement gap.

One model for high-quality, academically focused preschool comes from the AppleTree Institute in Washington, DC. The AppleTree Institute has developed a comprehensive pre-k curriculum and a model for delivering that curriculum called *Every Child Ready*. The curriculum is appropriately play-based, rigorous, and focused on developing critical pre-literacy and numeracy skills. The model that accompanies it emphasizes data-driven instruction, a relentless focus on understanding what children need to learn in preschool to succeed in later grades, and recruiting and training highly qualified teachers and school staff. Now fully implemented in seven AppleTree Early Learning charter school campuses across Washington, DC as well as 31 public school classrooms and five other charter networks, *Every Child Ready* helping students to achieve at unprecedented levels and to go on to academic success in later grades.

In the important push for high-quality, universal preschool, AppleTree's model stands out as one that can help providers understand what high-quality preschool looks like. Through investment and innovation and with a focus on providing the right mechanisms for delivering high-quality early childhood options, a renewed focus on early childhood education can ensure the success and

expansion of AppleTree and programs like it—programs that succeed in closing the achievement gap before it begins.





## INTRODUCTION

In his first State of the Union address after re-election, President Barak Obama highlighted universal access to high-quality early childhood education as a priority. This part of the address was particularly well-received; in contrast to the uncertainties surrounding the controversial Common Core State Standards Initiative, universal access to early childhood education seemed an idea that most citizens (and politicians) could support.

But the *Preschool for All* initiative that Obama introduced in 2013 represents more than just a popular idea. In addition to being welcome news to millions of families across the country—families who do not or have not had access to early childhood education options—the *Preschool for All* initiative represents a renewed emphasis on a policy issue that has at times received little attention and at other times been seen as integral to improving American education. For decades the debate over preschool has focused on access to schooling. The present initiative, however, powerfully frames preschool as a key mechanism to close the achievement gap by emphasizing the idea that all children should have access to a *high-quality* preschool education. It is in this new context that preschool is once again a priority on the federal education agenda.

Over the past two decades, discussion of preschool as a key education reform has been eclipsed by initiatives that have focused on the establishment of standards and methods for holding schools accountable for student performance on standards. While these initiatives are important and have made a difference for many of our nation's students, it is clear that standards and accountability alone will not close the achievement gap. This is because too many of our nation's children *enter* school at a deficit, unprepared for the work that will be expected of them in kindergarten and beyond. Researchers have known for some time that children who lack the pre-literacy and numeracy skills, as well as the cultural and social capital necessary to be

successful in the critical first years of schooling, struggle to keep up with their peers who enter school comparatively well prepared.<sup>1</sup> These researchers have posited that the achievement gap exists before children ever set foot in kindergarten. By committing to invest \$75 billion in federal money (with an equal state match) “to provide all low- and moderate-income four-year-olds with high-quality preschool,” Obama’s *Preschool for All* initiative is an acknowledgment that the achievement gap must be addressed in early childhood.<sup>2</sup>

In addition to investing in high-quality preschool, Obama’s initiative also promotes “high-quality early education programs for children under age four and access to full-day kindergarten.”<sup>3</sup> For children in many states, and poor and minority children especially, access to school early in childhood would be a novel opportunity. Although 40 states and the District of Columbia currently offer state-funded pre-kindergarten (pre-k) programs, in 2013 only 4 percent of 3-year olds and 28 percent of four-year olds were enrolled in such programs, nationally.<sup>4</sup> These statistics do not reflect the private, tuition-based pre-k programs that some families can afford. Instead, they speak to the reality that access to early childhood education is defined along lines of socio-economic status.

Even in states where pre-k programs are offered, they are not widely available and/or accessible to all children. This issue is complicated by the fact that only 10 U.S. states currently require kindergarten, which means that when early childhood programming is on a state’s agenda, its advocates are often vying for money that could be allocated to establish kindergarten programs. For this reason and others, many states have in recent years cut budgets allocated to pre-k programs. In some cases this has resulted in decreased pre-kindergarten enrollment due to decreased program availability. Even modest increases in funding in 2013, reflective of an economy on the upswing, have failed to make up for the drastic cuts that many states made in the past three or four years.<sup>6</sup>

As troubling as these data are to proponents of universal pre-kindergarten, they are perhaps not as troubling as the data that suggest that even when children are enrolled in state-funded pre-k they may not be guaranteed a *high-quality* early education. A recent report by the National Institute for Early Education Research (NIEER) finds that nationwide only 19% of children enrolled in state-funded pre-k are attending programs that meet benchmarks for quality.<sup>7</sup>

Questions about whether federally or even state-funded pre-k programs can be of high-quality are at the heart of criticisms surrounding Obama's *Preschool for All* proposal. Detractors contend that the proposal itself is based on flawed research, specifically with regard to the promise of federally funded programs such as Head Start to adequately prepare children for school.<sup>8</sup> This focus on federal funding and involvement is especially relevant in the context of early childhood education because, unlike K-12 education, where states and localities provide the bulk of funding for public schools (roughly 92 percent),<sup>9</sup> the major source of funding for public early child education is the federal government. Moreover, the focus on the quality of federal programming is pertinent because longstanding programs, such as Temporary Assistance for Needy Families (TANF) childcare subsidies and Head Start have traditionally focused on "inputs related to facilities quality, classroom, quality, and health and safety issues. While worthwhile, these programs were never intended or designed as learning interventions."<sup>10</sup>

Indeed, proponents of programs such as TANF and Head Start have acknowledged that these assertions are true. They note that the support, nurturing, and preventative health care that such programs provide are the intended and very important benefits that participants reap. "Healthy children," they remind critics, "are better prepared for school and life." Research does show that many program participants do benefit greatly from the mental and physical health supports provided by TANF and Head Start.<sup>11</sup>

But what does an experience that provides support and nurture in addition to an *education* focused on learning interventions look like? What constitutes 'high-quality' in the context of pre-school? Perhaps most importantly, can and should high-quality preschool learning intervention be provided with public funds? If Obama's push for universal access to early childhood education is to be successful, it is imperative that the *Preschool for All* initiative be built upon models for the delivery of early childhood education that prepare all children, regardless of background, to be successful in school.

One model for early childhood education, *Every Child Ready*, which was born of the AppleTree Institute in Washington, DC, supports the notion that high-quality preschool for all can be reality.

AppleTree's vision of quality early childhood interventions is based on the research of Betty Hart and Todd Risley, who find that children from economically disadvantaged families, in the years between birth and three, tend to hear 30 million fewer words than their more advantaged peers. They also tend to learn fewer of the social/emotional skills that are aligned with school success, such as how to attend to instruction, how to solve problems with words, how to persist when frustrated, how to share, and even how to take turns or listen to directions. Such deficits put these children at a great disadvantage.<sup>12</sup>

Since its establishment in 1996, the AppleTree Institute has been a non-profit dedicated to researching and developing a rigorous academic curriculum for three- and four-year olds—a curriculum designed to address the deficits that Hart and Risley identify in their research and, in doing so, to close the achievement gap before it can be detected in kindergarten and elementary school. The AppleTree Institute has also developed a model for delivering that curriculum—a model that helps educators understand what to teach, how to teach, and how to ascertain whether their teaching is effective.<sup>13</sup>

In the spring of 2014, the AppleTree Institute is operating a charter school network with seven campuses across Washington, DC, and its curriculum has been fully implemented in 31 public school classrooms in five other charter networks across the same area. Since its first campus was established in 2005, students in AppleTree's Early Learning Charter Network have achieved promising results: graduates of the pre-kindergarten program, the vast majority of whom are low-income and would not otherwise have access to preschool, have left AppleTree's schools with the pre-literacy and numeracy skills necessary to master an elementary school curriculum. They have also achieved at levels at or beyond those of their peers who have had access to private pre-school educations.<sup>14</sup>

With an increased show of support for Obama's initiative in Congress and increased attention to the issue of universal access to preschool in states and major urban centers such as Washington, DC, New York, and Atlanta, the AppleTree Institute and its *Every Child Ready* instructional model provide an important example of what high-quality, universal early childhood education might look like. Moreover, with \$75 billion in federal money at stake and at least as much at the state level, a deeper look at AppleTree's history, growth, outcomes, and ongoing commitment to providing early childhood education to the children who need it most could be key to understanding one overlooked but very important path to narrowing the achievement gap.

### **THE IMPACTS OF EARLY CHILDHOOD EDUCATION AND THE STATUS QUO**

The AppleTree model for early childhood education, known as Every Child Ready, focuses on prevention. By providing children and families with high-quality early childhood options, and by using a three-tiered Response to Intervention approach specific to pre-kindergarten, the AppleTree model is designed to prevent children who would be at high risk of being identified for special education services at the elementary level from ever being identified as such.

The AppleTree Institute developed the Every Child Ready instructional model and is devoted to researching best practices in early childhood education, identifying innovations that work, and providing evaluation and support to schools. Its work in defining what constitutes high-quality early childhood education has been recognized as important in the early childhood sector not only because of the results that AppleTree's schools are producing but also because it represents a shift in thinking with regard to what publicly available early childhood programming should look like.

To understand the AppleTree approach is to understand that a preschool education should be provided with the 'end-game' in mind. The model is built upon the premise that early childhood education providers must first understand what students will be expected to know upon entering kindergarten and even middle school before they can deliver a rigorous, pre-literacy and pre-numeracy focused curriculum for teaching and learning. Mapping out the required outcomes the incoming preschooler will be expected to achieve at successive grade levels allows for the creation of age-appropriate but rigorous learning experiences and assessments, which help to ensure learner success. Because of this 'backward planning' approach, AppleTree has been lauded as an educational innovator, even winning a prestigious, \$5 million Investing in Innovation (I3) grant from the federal government.<sup>15</sup> Its educational offerings stand in stark contrast to the kind of pre-kindergarten education that most students receive, especially low-income students and students of color.

Some children in the US—especially children of middle- and upper-middle-class parents—do have access to high-quality early childhood options that resemble AppleTree. Unfortunately, these high-quality options are not the norm. Instead, what predominates is a "patchwork of poor and mediocre programs," especially in the public sector.<sup>16</sup> Publicly available programs have traditionally resembled day-care settings and, unlike some of their tuition-based counterparts, contain little academic content, are not aligned

to standards for learning, and tend to employ teachers with low levels of education and little or no training in child development, academic content, or pedagogy. Some feel that these programs are lacking in such pedagogy because they were in fact never meant to be academic; problematically—despite overwhelming evidence that academic programming matters—the inputs and compliance focused system that runs these programs (government) ensures that needed changes are not being made. Whatever the cause, it is clear that these programs do little to ward off the achievement gap that begins before children enter kindergarten. This is because access to early education is only one part of the equation: it's quality that counts. High-quality early childhood programs lead to substantial positive impacts on academic and life outcomes.<sup>17</sup>

Three methodologically rigorous, longitudinal studies provide insight: The High Scope Perry Preschool study, the Abecedarian Study, and the Chicago Child-Parent Centers Study all equate preschool with “gains in achievement and decreases in behavior problems, grade repetition, and special education.” These short-term benefits are complemented by long-term advantages for those that have access to early childhood programming, including “increased earnings, decreased crime and delinquency, and better mental health.”<sup>18</sup>

Perhaps the most famous of these studies, the High Scope Perry Pre-School Study, provides convincing data about the benefits of access to high-quality preschool programming. Conducted between 1962 and 1967, the Perry Preschool Study included “three- and four-year old African American children living in poverty and assessed to be at risk of school failure.” The children were enrolled in public pre-school in Ypsilanti, Michigan in what researchers deemed a high-quality program, where teachers had at least a Bachelor's degree, the average teacher to child ratio was 6:1, and an academic curriculum was in place—a curriculum that “emphasized active learning, in which the children engaged in activities that (i) involved decision making and

problem solving, and (ii) were planned, carried out, and reviewed by the children themselves, with support from adults.”<sup>19</sup> Importantly, the study was a randomized trial; of the 128 children enrolled, 64 were in the treatment group that received a preschool education and 64 were in the control group that did not.

By the time study participants were 10 years of age, it was clear that those receiving the treatment were achieving better outcomes on standardized tests and less likely than their counterparts who did not receive the treatment to be held back in school. By age 15, participants who received the treatment exhibited evidence of increased community engagement, and by age 19 the same participants were more likely to have attained a higher level of education than their non-treatment peers. By age 27, well into adulthood, Perry Preschool students were more likely to be employed and to own a home and less likely to have committed a crime, be on welfare or be a single parent.<sup>20</sup> As of 2005, the Perry Preschoolers had been participating in the study for 40 years and researchers found that the impacts of the high-quality preschool education they received were significant and lasting. Most notably, participants who had received the treatment had a 42 percent higher median income, a 33 percent lower arrest rate for violent crimes, and were 26 percent less likely to have received government assistance.<sup>21</sup>

Additional studies, such as the Abecedarian Study and the Chicago Child-Parent Centers Study, have drawn similar conclusions about the effects of access to high-quality preschool. All three studies looked at programs serving disadvantaged populations and, importantly, all three programs studied had higher standards for teacher quality and teacher pay than typical publicly funded programs, such as Head Start.<sup>22</sup> While sometimes dismissed as “hothouse” studies,<sup>23</sup> together, these studies suggest that access to early learning provides benefits. Beyond that, however, they also provide convincing evidence that it is the quality of preschool programming that does or does not contribute to a lasting, positive impact on cognitive and life outcomes.

*Since its beginning in 1965 as part of the War on Poverty, Head Start's goal has been to boost the school readiness of low-income children. Based on a "whole child" model, the program provides comprehensive services that include preschool education; medical, dental, and mental health care; nutrition services; and efforts to help parents foster their child's development—Head Start Impact Study, Final Report, January 2010, p. i.*

When combined with studies of other pre-k offerings, specifically state and federally funded offerings, these data underscore the notion that quality programming makes all the difference. Studies of the often-criticized Head Start, a federally funded early childhood education and care program conceived in the 1960s, support this point. One study conducted in the state of Georgia is representative. It found that, when compared to children in state-sponsored preschool programs, children enrolled in Head Start were less prepared to enter kindergarten. Though both groups made "significant gains" on three of four standardized assessments administered as a part of the study, children who attended the state-sponsored pre-kindergarten outperformed their Head Start counterparts on all standardized assessments and on 11 of 14 total ratings given by their kindergarten teachers.<sup>24</sup>

Federally sponsored studies of Head Start draw similar conclusions about the effects of the

program and attribute the weaker outcomes of Head Start students, in part, to the range of experiences that children enrolled in Head Start can have. Despite 2300 input standards<sup>25</sup> outlined by the federal government, Head Start centers, which are operated independently by community-based organizations and peppered throughout the country, can look quite different place to place. A report by the Department of Health and Human Services notes, for example, that approximately 40 percent of the children enrolled in Head Start were in centers that failed to place "a strong emphasis on language and literacy and math activities." 40 percent of the children in the study were also in centers where teachers had no post-secondary degree, and of the 60 percent of centers where teachers did have postsecondary degrees, approximately 30 percent of teachers had Bachelor's degrees and the other 30 percent had Associate's degrees.<sup>26</sup>

**NATIONAL INSTITUTE FOR EARLY EDUCATION RESEARCH  
PUBLIC PRESCHOOL QUALITY STANDARDS CHECKLIST**

Early learning standards	Aligned to comprehensive state standards for early learning
Teacher degree	Lead teacher must have a B.A., at minimum
Teacher specialized training	Lead teacher must have specialized training in pre-K area
Assistant teacher degree	Assistant teacher must have CDA or equivalent, at minimum
Teacher in-service	Teachers must receive at least 15 hours/year of in-service professional development and training
Maximum class size (4 year-olds)	20 or fewer
Staff-child ratio	1:10 or better, for four-year olds
Screening, referral, and support services	Screenings and referrals for hearing, vision, and health must be required; at least one additional support service must be provided to families
Meals	At least one meal daily
Monitoring	Site visits to demonstrate ongoing adherence to state program standards

From: <http://www.megrants.org/programs/201006EarlyChildhoodFundors/NIEER%20STANDARDS.pdf>

Thus the major failure in the design and implementation of Head Start, the most widely available and well-known public preschool program, is the failure to provide children with a robust dose of evidence-based early learning—quality early childhood education. In this case, quality can be defined as a specific set of program features, or benchmarks, to which preschool participants are exposed. Those features include, according to NIEER, highly educated and trained teachers with academic backgrounds in child development, low student to teacher ratios, academic standards, and a culture of evaluation, embodied by site visits that are conducted for quality assurance.

While year-to-year studies show that many state-funded, publicly available pre-kindergarten programs have made progress in meeting these benchmarks and especially in establishing academic standards for early learning, the NIEER also finds that on other benchmarks the data are less promising. In 2013 only 57 percent of teachers teaching in early childhood programs nationwide had a Bachelor's degree and a mere 28 percent of teachers' assistants, adults who spend ample one-on-one time with children in the classroom, possessed a Child Development Associate credential, a nationally recognized entry level credential in the field of early childhood education.<sup>27</sup>

Given these data, it seems clear that any push for access to preschool must be accompanied by a concomitant push to increase the quality of programs aligned with NIEER standards. There should also be a push to increase exposure to language, vocabulary, pre-literacy skills, early math skills and key social/emotional or “school ready” behaviors. For, when and where quality preschool options exist, children benefit, as does society at large. A 2005 report jointly published by the Massachusetts Institute of Technology (MIT) Workplace Center and Legal Momentum confirms:

Investments in quality childcare and early childhood education do more than pay significant returns to children—our future

citizens. They also benefit taxpayers and enhance economic vitality. Economic research—by Nobel Prize-winners and Federal Reserve economists, in economic studies in dozens of states and counties, and in longitudinal studies spanning 40 years—demonstrate that the return on public investment in high-quality childhood education is substantial.<sup>28</sup>

Importantly, the Obama administration is not alone in believing in the return on investment that high-quality preschool can yield. Increasingly, states are ramping up the availability of preschool options for students. Just this spring, the new mayor of New York City, William DeBlasio, made news for accepting state funding to establish more pre-kindergarten programs in exchange for loosening some of the city's restrictions on charter schools. The mayor's actions, in this case, speak to the way in which cities and states are beginning to emphasize pre-kindergarten; charter schools are a hotly contested issue in New York and the mayor gave up on a campaign promise to halt their spread in order to be able to accept the increased funding for preschool that he knew citizens wanted and the city needed.<sup>29</sup>

The expansion of publicly funded preschool in New York and other places only underscores how important it is to build new programs from models that have been proven to work. While it is not yet clear that New York will build such programs, comprehensive, evidence-based approaches, such as the approach on which AppleTree Early Learning's network of charter schools is based, provide a starting point for understanding how both the federal government and individual states can begin to expand access to high-quality preschool.

### **APPLETREE EARLY LEARNING: A CASE STUDY IN QUALITY**

When AppleTree President and CEO Jack McCarthy founded the AppleTree Institute in 1996, he was focused on “increasing the supply of effective schools through innovation.” At the time, Congress was writing the DC School Reform Act and McCarthy and his team were focused on establishing a strong foundation for the

charter schools movement in Washington, DC. AppleTree began with two charter high schools and the conversion of one junior high school from the District of Columbia Public Schools. While the schools have since produced strong academic outcomes (all are Tier 1 or 2 schools today in DC's rating system), helping students achieve at levels higher than their peers in the DC public system, McCarthy knew at their creation that too many students were entering at a fifth or sixth grade reading level. McCarthy recognized that playing "catch up" makes it nearly impossible to close the achievement gap at scale. He wondered: "what if we could provide a strong start for students at the beginning of their educational experience?" And from this, AppleTree's focus on early learning was born.<sup>30</sup>

AppleTree's pivot to early education took place in 2000, shortly after the Report of the National Reading Panel located, through comprehensive research, the most effective techniques for teaching children to read.<sup>31</sup> Organizations such as the Pew Charitable Trust were just beginning to advocate for early learning. With so few policy makers and educators focused on preschool as a means of closing the achievement gap, work in the early childhood sector, especially around quality and access was quite innovative. Problematically, though, scant information existed as to what quality programming for the public sector might look like.<sup>32</sup>

The AppleTree Institute therefore spent years at the intersection of research, policy, and practice implementing an evidence-based curriculum, gathering data, and using it to continuously improve its program. The initial fruit of that research was AppleTree Early Literacy Preschool, a laboratory preschool established in 2001. The tuition-free independent preschool took a research-based approach to the teaching of early literacy and language skills.<sup>33</sup> AppleTree worked with leading experts, including Dr. Judy Schickedanz of Boston University, and piloted units of *Opening the World of Learning*, later published by Pearson.

In 2004 the District of Columbia (where universal access to publicly funded preschool became the norm in 2010)<sup>34</sup> granted a charter for AppleTree's preschool program. The first AppleTree Early Learning Public Charter opened in the fall of 2005. That same year, AppleTree Institute won a federal Early Reading First grant to fund its research and development efforts. AppleTree Early Learning was located very close to low-income housing in Washington, DC's Southwest Quadrant, giving many children from the Greenleaf Gardens and James Creek housing projects access to the school, provided that they won a place via the lottery. This first preschool site was quickly oversubscribed, and AppleTree set a goal to expand to 500 children in the next five years.

Since 2005, AppleTree has continued to refine its approach through a research to practice model. It has also been expanding its reach across the Washington, DC area. By the 2013-2014 school year, AppleTree was operating seven preschool campuses in every quadrant of Washington, DC. Through support from *New Schools Venture Fund*, AppleTree partnered with other local providers of preschool education who use its *Every Child Ready* instructional model. As of July 2014, AppleTree preschools will serve 760 children in 37 classrooms, and AppleTree Institute's instructional quality team will be supporting implementation of *Every Child Ready* at 7 other public charter schools, serving an additional 800 children as well as the District's lead Head Start agency: The United Planning Organization.

The majority of the students who attend AppleTree Early Learning Public Charter Preschools qualify for free or reduced-price lunch (FRPL), an indicator of socioeconomic status. On six of the seven AppleTree campuses, over 50 percent of students are FRPL, and some of the campuses have significantly higher percentages of students who would be considered low socioeconomic status by the FRPL measure. AppleTree students are also overwhelmingly African American, and at least one campus, Columbia Heights, has a population in which

38 percent of the students are English language learners. These demographics matter because research shows that students of low socioeconomic status, particularly African American and Hispanic students, are the same students who are most likely to be victims of the achievement gap later in school. In the Washington, DC area, this is especially true. The 2011 National Assessment of Educational Progress (NAEP) revealed that “in reading and math, the gaps in scores between black and white students” were bigger in the District of Columbia than in “20 other urban school systems, including New York, Los Angeles, and Miami.”<sup>35</sup> This gap, especially as it exists in Washington, DC, is the main reason why AppleTree is committed to serving low-income, minority students—it’s

primary mission is to close the achievement gap before it begins.<sup>36</sup>

#### THE “EVERY CHILD READY” APPROACH

To accomplish its mission, AppleTree takes an approach to preschool that is very different from the status quo in early childhood education. That approach is embodied by *Every Child Ready (ECR)*, which the Institute describes as an evidence-based instructional model for how to teach, what to teach, and how to know when teaching is being done effectively.<sup>37</sup> In implementation, this means that the model includes a standards-based curriculum aligned to the Common Core, professional development for teachers that focuses on both instruction and

#### APPLETREE EARLY LEARNING, STUDENT DEMOGRAPHICS, 2013-2014

Campus	Free or Reduced-Price Lunch	Black	White	Other
Amidon	50%	80%	14%	6%
Columbia Heights	69%	60%	30%	10%
Douglas Knoll	100%	98%		2%
Lincoln Park	34%	45%	45%	10%
Oklahoma Avenue	71%	95%	4%	1%
Parklands	89%	99%		1%
Riverside	56%	82%		18%

#### EVERY CHILD READY: MAIN COMPONENTS

How to Teach	What to Teach	How to Tell It’s Being Done Effectively
The <i>ECR Attributes Framework</i> and aligned professional development define effective classroom structures and practices that impact children’s learning and development.	The <i>Every Child Ready</i> curriculum has 10 thematic units with engaging, standards-based lessons, family resources, and assessments built on the <i>Attributes Framework</i> and aligned to the Common Core.	The <i>Every Child Ready Quality Indicator Observation Tool</i> allows leadership to give teachers actionable feedback to improve learning.

From: *Every Child Ready: An instructional model that can erase the achievement gap before kindergarten*, p. 1  
<http://www.appletreeinstitute.org/wp-content/uploads/AppleTrees-Every-Child-Ready-Preschool-Instructional-Model.pdf>



pedagogy, student assessments and program and teacher evaluation tools that take advantage of data to drive classroom instruction.<sup>38</sup>

The curriculum itself, which is a two-year scope and sequence of ten thematic units differentiated for three- and four-year olds, is not based upon one pedagogical approach, in particular.<sup>39</sup> Rather, it includes “a balance of instructional types” that can occur throughout the school day and over the course of the school year. This means that students receive “explicit, direct instruction and guided, independent practice opportunities throughout the instructional day.” Students also have opportunities to practice skills both with guidance from teachers and through interactions with their peers.<sup>40</sup> This flexibility of approach is purposefully built into the curriculum, allowing teachers and even schools to tailor their approaches to student needs. At the same time, the clear content of the curriculum and the existence of a framework for how different instructional types should be utilized act as a check to ensure that all students have every opportunity necessary to master the curriculum.

The notion that some students will need different types and different amounts of opportunities for mastery is built into the ECR approach. According to Anne Zumo Malone, AppleTree's Chief of Schools, in many cases the approach can look “specific to different AppleTree centers and even specifically tailored for individual children.” The curriculum provides the boundaries within which to work and guidance with regard to what works best. Teachers may be told, for example, “what words to use, what concepts to target, and what questions to ask,”<sup>41</sup> all within a framework for teaching that at the same time provides for individual teachers to make informed decisions based on their knowledge of child development.

This type of flexibility coupled with the accountability that strong standards for learning can provide differentiates AppleTree in the early childhood space. *ECR's* alignment with the Common Core State Standards is also notable, though not because of the content or quality of the Common Core State standards themselves.

Instead, the alignment is notable because the AppleTree Institute, in designing the *Every Child Ready (ECR)* curriculum, was intentional in utilizing backward design. Working from the standards that children are expected to master in elementary school ensures that all AppleTree teachers expose students to the pre-literacy and numeracy skills that prepare preschoolers for kindergarten and foster academic success later in school. In this way, the program remains academically focused, though much of it is delivered to children within the structure of play. Adherence to academic standards and backward mapping from what students will be expected to know later in school is absolutely critical to student success. “What a child knows and understands at age three,” Anne Zumo Malone points out, “is predictive of fourth grade achievement.”<sup>42</sup>

Because there is such great value in knowing what a student knows, AppleTree makes a point of assessing each child's progress on the ECR curriculum. “At least four times a year, children's pre-academic skills are measured through brief assessments, which give teachers a chance to reinforce skills with some students or offer more advanced work to children who are ready for it.”<sup>43</sup> The concept of testing at the preschool level, standardized or otherwise, gives pause or is misunderstood by some; in the context of the AppleTree approach, measuring progress is both natural and necessary to understand whether children are making gains in the skills that are predictive to school success. According to Lydia Carlis, Chief of Research and Innovation, all of the assessments are “developmentally appropriate and administered in a one-to-one context, where children are playing a game with a teacher or another student” and the teacher is looking to gather specific information about the child's understand of and/or ability of a concept or skill. The idea is that the assessment should be “both enjoyable for the student and ecologically valid—teachers are assessing to understand whether children are gaining the foundations for learning that they so critically need at the ages of 3 and 4.”<sup>44</sup>

Data gathering at AppleTree’s schools is not limited to assessment. Using data to meet the needs of individuals and classrooms of students is a part of the organization’s culture. Teachers are expected to plan around the data that they gather on a daily basis, and teacher coaches and principals often utilize and sometimes lend a different perspective to the data that teachers gather. In fact, the data that teachers collect informs decision making at all levels of the organization. It is common, notes Carlis, to mine student data at leadership meetings in attempts to understand aspects of the curriculum that do and do not work and how teachers and school leaders can better meet the needs of all students. Indeed, in the 2012-2013 school year the mathematics component of the ECR curriculum was overhauled in response to student data and the way in which teachers and school leaders interpreted that data.<sup>45</sup>

The value placed on data gathering and interpretation is integral to AppleTree’s evidence-based approach. That approach extends beyond aligning curriculum to standards on which students can be evaluated and even beyond differentiating instruction for students. It also includes screening all students that enter an AppleTree classroom to ensure that they are provided with all of the resources that might be necessary to support learning. Perhaps most pertinent to student academic outcomes, AppleTree’s evidence-based approach means that teachers are constantly evaluated to determine whether they are effectively providing all students with the best opportunities for learning available. Those evaluations are accompanied by ongoing opportunities for professional development and coaching that allow even the most effective teachers to continually hone their craft.

### TEACHER TRAINING AND EVALUATION

The AppleTree model makes clear that effective teaching and learning are at the heart of student success. In this it is aligned with years of research on the difference that good teachers can make.<sup>46</sup> Even a rigorous and well-designed curriculum cannot ensure strong student outcomes, that

curriculum must be crafted with the input of and delivered by qualified, reflective professionals. With this in mind, AppleTree has refined a specific approach to recruiting and training its teachers.

Each school’s staff is comprised of a principal instructional leader, lead teachers, teaching fellows, and teaching assistants. In accordance with research that suggests the importance of teacher education,<sup>47</sup> all teachers in AppleTree early learning preschools hold at least a Bachelor’s Degree and all teaching assistants are credentialed.<sup>48</sup>

Most staff that aspire to be classroom teachers begin as teaching fellows—recent college graduates of any discipline who participate in a one to two-year training program where they learn about child development and classroom management and receive ample feedback from coaches on how to teach and how to use data to drive instruction. Successful teaching fellows may go on to become lead teachers, master teachers and coaches—all teachers work closely with credentialed teaching assistants in differentiating instruction and tracking each student’s individual needs.<sup>49</sup>

Professional development and coaching is important not only during the fellowship period, it is an integral part of the evidence-based culture of AppleTree. Teachers, leaders, coaches, and principals use student data to drive informed decision-making about how to improve instruction and pedagogy, whether for one student in particular or for a classroom as a whole. The fellowship model, in which future teachers receive and implement constant feedback is important in this regard; AppleTree teachers are accustomed to being observed and, in turn, accustomed to receiving the support that they need to continually improve. To facilitate such improvement, the AppleTree Institute works to provide all teachers with not only a curriculum but also a battery of assessment, observation, and professional development tools meant to support the schools and their staffs. This approach to teacher development is “resource and time intensive” and much different than the status quo

of teacher selection and professional development in most early childhood settings. Research shows that preschool teachers need support. AppleTree believes that these evidence-based supports are integral to “positively impacting young children’s outcomes.”<sup>50</sup>

Of course, AppleTree thinks of teachers not only in terms of the outcomes they help students to achieve but also as experts in the field and invaluable resources for determining whether the *Every Child Ready* curriculum and model are working. One example of this is the way in which teachers provide input when components of the *ECR* curriculum are revised or developed. Teachers may opt-in to pilot a new curriculum and, in doing so, agree to collect student outcome and behavioral data and provide detailed feedback on aspects of the curriculum that do and do not work. Thus teachers help mold the final curriculum and, in doing so, support their colleagues throughout the AppleTree network.<sup>51</sup>

By viewing teachers as the most important people in the student experience, AppleTree is taking a stance about what it takes to dramatically increase the quality of early childhood education. The model assumes that high-quality and thoughtfully deployed educators can have a great impact on student outcomes, and the data suggest, so far, that the model is getting it right. AppleTree Early Learning is doing more than simply delivering an innovative curriculum for early childhood education. Data reveal that through its innovative overall approach, AppleTree is making a difference in the lives of the young people it touches.

## **STUDENT OUTCOMES**

The difference that AppleTree makes is, of course, evident in many ways, including high student engagement, high parent engagement, and even the fact that AppleTree has expanded so rapidly in recent years due to high demand for its programming. But the most quantifiable way in which AppleTree demonstrates its impact is through growth in student achievement from year to year.

To focus on student assessment and student achievement data so early in a child’s life is not common in the early childhood sector. Indeed, in an era when some are questioning the push for data-driven accountability altogether, AppleTree is pushing the envelope in this regard.<sup>52</sup> As previously mentioned, AppleTree believes that ecologically valid student assessment, assessment that is administered within the context of play and that is used with the explicit goal of “finding the best strategy to support each child,” is assessment that can make a difference. Thus the data that AppleTree gathers drives instruction in meaningful ways while also allowing the organization to understand whether its approach is making a difference in student learning.<sup>53</sup>

Aside from the formal and informal data that teachers gather on a daily basis, the organization also gathers data that tracks student progress on the curriculum. All children who enter an AppleTree Early Learning Center are administered a baseline assessment so that teachers may understand their learning needs. This baseline assessment measures five early learning skill sets. Students are assessed on the same skill sets at the end of each year to allow teachers to measure student growth and for the organization to understand whether it is meeting its goals for continuous improvement.

The standard early learning assessments measure student skills in five domains: 1) receptive vocabulary, 2) definitional vocabulary, 3) early math ability, 4) phonological awareness, and 5) print knowledge. Similar assessments are given to public pre-school and pre-kindergarten students in Washington, DC as well as to preschoolers in various early childhood settings across the country.

On baseline assessments, AppleTree students typically score on par with their peers. In under-resourced communities like those that AppleTree serves, children typically begin below average on standard early education assessments. AppleTree’s mission is to make up for this below average start, bringing students to proficiency or above average on the same assessments before the

start of kindergarten. Thus far, the data show that AppleTree is fulfilling that mission. By the end of their second year with AppleTree, students significantly outperform their peers on standard early learning measures. The chart below demonstrates that after two years at AppleTree students score well above the average on all standard early learning assessments. Put simply, this means that after two years with AppleTree,

“students recognized 25 percent more letters in kindergarten and have better oral fluency in first grade (scoring 20 points higher on tests) than their non AppleTree peers. In addition, AppleTree alumni are stronger oral readers by the second grade (70 percent higher).”<sup>54</sup>

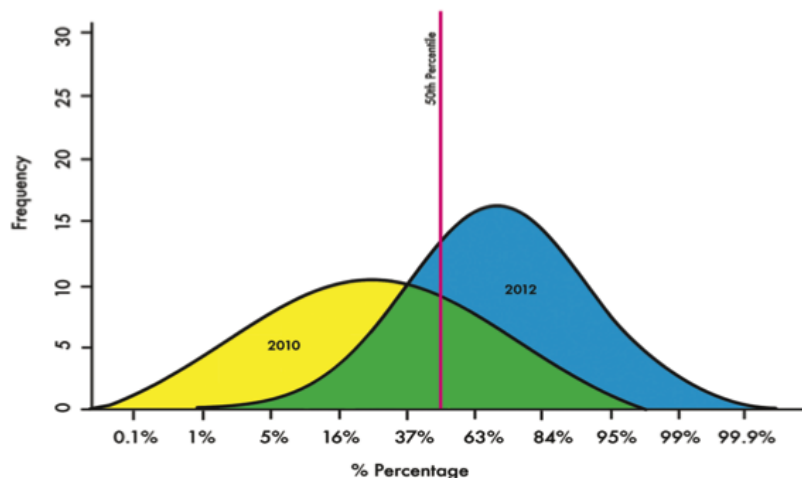
These data show not only that AppleTree is equipping students with the skills that are foundational to academic success but also that the impact that AppleTree has is lasting.

The tables below provide a more detailed look at the impact that AppleTree has in each academic domain. AppleTree measures its own success by looking for the value it adds to each student’s education; that is, it seeks to understand how much students grow over time in each academic area. “A change of four points or higher on a standard assessment score is considered *significant* growth for one year.”<sup>55</sup>

All of the data below were provided by AppleTree and reflect assessments administered in schools years 2011-12 and 2012-2013.<sup>56</sup> Student scores are reported in the disaggregate, by socio-economic status. Student subgroups include those who receive free lunch (Free), reduced-price lunch (Red), and students whose families are able to pay for their lunch (Paid). The data demonstrate that AppleTree students are making *significant* growth on all measures from year to year. Importantly, these data also demonstrate that AppleTree’s teachers are effectively helping students to close the achievement gap. A close look reveals that “children in school year 2012 came to school with fewer of the skills captured by [AppleTree’s] baseline assessments . . . despite this, a greater percentage of students moved into the designated performance ranges by outcome [in the 2012 school year, as compared to 2011].”<sup>57</sup>

**Figure 1. AppleTree Students, 2011-12 to 2012-13**

Two Year Progression Graph of Definitional Vocabulary (Expressive Language)



**PEABODY PICTURE VOCABULARY TEST (PPVT): RECEPTIVE VOCABULARY**

	Preschool Baseline	Preschool Outcome	Preschool Change		Pre-K Baseline	Pre-K Outcome	Pre-K Change
SY11 Free	94.66	101.68	7.02	SY11 Free	97.45	102.21	4.76
SY12 Free	91.97	99.66	7.69	SY12 Free	97.43	104.54	7.11
SY11 Red	102.86	104.4	1.54	SY11 Red	103.29	103.35	0.06
SY12 Red	99.10	109.70	10.60	SY12 Red	103.14	107.76	4.62
SY11 Paid	106.36	110.88	4.52	SY11 Paid	106.40	108.30	1.90
SY12 Paid	106.59	112.92	6.33	SY12 Paid	106.26	111.21	4.95

**TEST OF PRESCHOOL EARLY LITERACY: DEFINITIONAL VOCABULARY (TOPEL DV)**

	Preschool Baseline	Preschool Outcome	Preschool Change		Pre-K Baseline	Pre-K Outcome	Pre-K Change
SY11 Free	88.49	102.88	14.39	SY11 Free	101.15	106.59	5.44
SY12 Free	82.64	97.19	14.55	SY12 Free	94.18	98.02	3.84
SY11 Red	96.96	106.07	9.11	SY11 Red	103.94	109.18	5.24
SY12 Red	91.13	103.17	12.04	SY12 Red	99.1	100.86	1.76
SY11 Paid	100.06	106.59	6.53	SY11 Paid	114.21	114.23	0.02
SY12 Paid	97.49	106.22	8.73	SY12 Paid	101.62	103.79	2.17

**TEST OF EARLY MATH ABILITY (TEMA)**

	Preschool Baseline	Preschool Outcome	Preschool Change		Pre-K Baseline	Pre-K Outcome	Pre-K Change
SY11 Free	84.93	97.75	12.82	SY11 Free	93.73	99.92	6.19
SY12 Free	84.55	95.21	10.66	SY12 Free	90.12	98.82	8.70
SY11 Red	91.74	105.95	14.21	SY11 Red	96.71	102.24	5.53
SY12 Red	88.83	103.43	14.60	SY12 Red	92.14	102.57	10.43
SY11 Paid	97.85	109.66	11.81	SY11 Paid	100.88	108.25	7.37
SY12 Paid	93.36	107.06	13.70	SY12 Paid	101.76	112.76	11.00

**TEST OF PRESCHOOL EARLY LITERACY: PHONOLOGICAL AWARENESS (TOPEL PA)**

	Preschool Baseline	Preschool Outcome	Preschool Change		Pre-K Baseline	Pre-K Outcome	Pre-K Change
SY11 Free	88.97	96.74	7.77	SY11 Free	95.88	109.25	13.37
SY12 Free	86.56	97.05	10.49	SY12 Free	92.65	105.02	12.37
SY11 Red	90.21	105.32	15.11	SY11 Red	103.29	109.76	6.47
SY12 Red	90.55	106.1	15.55	SY12 Red	91.86	107.33	15.47
SY11 Paid	95.20	107.53	12.33	SY11 Paid	103.10	110.91	7.81
SY12 Paid	94.15	111.39	17.24	SY12 Paid	102.57	110.74	8.17

**TEST OF PRESCHOOL EARLY LITERACY: PRINT KNOWLEDGE (TOPEL PK)**

	Preschool Baseline	Preschool Outcome	Preschool Change		Pre-K Baseline	Pre-K Outcome	Pre-K Change
SY11 Free	97.57	117.03	19.46	SY11 Free	108.93	112.14	3.21
SY12 Free	96.34	114.73	18.39	SY12 Free	109.49	112.64	3.15
SY11 Red	108.00	125.79	17.79	SY11 Red	114.59	114.18	-0.41
SY12 Red	107.57	122.07	14.50	SY12 Red	116.14	116.38	0.24
SY11 Paid	113.41	127.59	14.18	SY11 Paid	114.21	114.23	0.02
SY12 Paid	117.31	115.79	-1.52	SY12 Paid	114.14	125.35	11.21

**THE IMPACT IN CONTEXT**

While the data above tell an important story about the impact that AppleTree has on students from the moment they matriculate until the moment they graduate, the data are even more powerful when placed in context. Children attending AppleTree early learning centers are overwhelmingly those who would not traditionally have access to preschool or to high-quality preschool options. With the advent of universal preschool in Washington, DC access to programming is changing—whether or not all of that programming is of a high-quality remains to be seen.

While it is not possible to make direct comparisons between AppleTree’s centers and other preschool and prekindergarten options in Washington, DC, anecdotal evidence suggests that the AppleTree model may be having a more powerful impact than most. In Washington, DC Public Schools, where the majority student population mirrors that of AppleTree, the achievement gap looms large and is evident very early on. By the time they leave elementary school, roughly 22 percent of DC students will be identified for special education services. This designation is often *not* indicative of the presence of a diagnosed learning disability or other medical issue. Instead, the label is given when children suffer from cognitive or developmental delays—delays that are far too often the result of

a lack of exposure to early childhood education altogether or a lack of exposure to high-quality early childhood programming. *Of the AppleTree graduates that have gone on to attend Washington, DC public elementary schools no student has, to date, been identified for special education services either in kindergarten or in elementary school. Moreover, no child who has graduated from AppleTree has been retained a grade after entering elementary school.* These data account for children who attended AppleTree in pre-kindergarten and are now in the fourth and fifth grade.

These anecdotal data make the powerful suggestion that AppleTree is closing the achievement gap before it starts. As the organization continues to track its graduates' growth and trajectories, it will be important for AppleTree to continue to focus not only the outcomes that students achieve on standardized assessments but also the other positive impacts that high-quality early childhood programming has been shown to have throughout life, such as improved socio-emotional health, improved job and earning opportunities, and reduced crime rates.

### **BRINGING THE MODEL TO SCALE**

AppleTree President and CEO Jack McCarthy believes not only that AppleTree's model can be brought to scale, but also that doing so could be one of the only ways to close the achievement gap. "We can no longer rely on the middle school model to close the achievement gap—sending kids to high performing charter middle schools, for example, just won't work. We can't start so late. This (early childhood) is the place. The action will be here, and this can be done at scale," he says.<sup>58</sup>

But how does one scale a model like AppleTree's, even with promises of federal investments, in a country where most states do not require or emphasize the importance of kindergarten, let alone the importance of pre-kindergarten for all children? The most obvious way to do so, according to McCarthy and others, is to find models that work, like *Every Child Ready*, invest in them with dedicated streams of revenue, and let those who implement the models have the flexibilities they

need to ensure a high-quality delivery system. These three things have been clear levers for AppleTree's success in Washington, DC: the Institute has received federal and private grants to build out its model; AppleTree schools can welcome students without having to charge tuition to cover operating costs, as DC is dedicated to universal access to preschool; and AppleTree's schools are charter schools, which means that they receive public dollars to operate and have the autonomy to do critical things, such as assemble the teaching staffs that they want and set their own budgets, in exchange for being held accountable for the outcomes that they produce.

The importance of the latter, a charter school delivery system, is not to be underestimated, notes McCarthy: "in places where establishing a charter school is not possible, we face barriers to replicating the model," he says. Compared to federally funded programs, where "compliance with bureaucratic regulations and funding is entangled," the charter model provides necessary freedoms to organizations such as AppleTree. It also provides a dedicated revenue stream for the schools—as public schools, charters receive public dollars. Perhaps most importantly, in states where the model works best, charters are held strictly accountable for student outcomes. Such a focus on outcomes as opposed to inputs is game-changing in the early childhood context—a focus on outcomes allows early childhood providers (as it does their counterparts in the K12 system) to understand whether they are moving students toward mastery and whether their models for doing so are working. Indeed, a focus on outcomes in the early childhood sector could ultimately help publicly funded early childhood programs be seen as places where the learning takes place and the foundations for future learning are laid. Unfortunately, without a focus on outcomes, it is all too often the case that such programs are simply seen as "a place for children to be while mom gets back to work."<sup>59</sup>

AppleTree continues to expand in Washington, DC both by applying for its own charters and by engaging in strategic partnerships with other

schools, mainly charter elementary schools looking to expand by including pre-k programming. In the future, the organization could also expand and establish charter schools in other states, where the policy environment lends itself to allowing AppleTree's schools the flexibilities that they need to flourish in a context that emphasizes student outcomes as opposed to inputs. Currently the organization sees potential in places such as Newark, New Jersey, Tulsa, Oklahoma, and Boston, Massachusetts. Beyond creating new schools, however, AppleTree is also poised to disseminate its model, *Every Child Ready*, in a way that will allow other providers of early childhood education across the country to become more effective at what they do.<sup>60</sup>

Disseminating the *Every Child Ready* model comes with some degree of risk. To ensure faithful delivery and therefore the effectiveness of the model, AppleTree proposes to carefully track student outcomes in every program using *Every Child Ready*. The organization would then use that data to conduct ongoing research and development and continually refine the model. There is also risk in disseminating the model in places where it might be difficult for providers to comply with key aspects. The importance of hiring high-quality teachers and providing rigorous and ongoing teacher training is one of the keys of *Every Child Ready*'s success. Where the ability to hire and retain such qualified teachers is limited, *Every Child Ready* may not be a good fit.

However AppleTree's expansion takes place, it is clear that the organization is committed to ensuring the quality of its product and, beyond that, to using *Every Child Ready* to radically change the opportunities that disadvantaged students have for academic and life success. As an organization, AppleTree is committed to a very specific mission, and it hopes to serve as "a reference case for effective early learning" not only based on its current achievements but on a continually evolving, evidence-based model for high-quality early childhood programming.<sup>61</sup>

Interestingly, in Washington, DC AppleTree's reputation for excellence may ultimately prevent it from being able to focus on another important aspect of its mission, which is to serve as a high-quality early childhood education provider for children who wouldn't otherwise have access. In recent years, AppleTree's schools have seen an increase in demand for their product, and that demand is coming from a wider community than ever before; in some areas of the city middle- and upper middle- class parents, those who would otherwise send their children to tuition-based preschools, are entering their children in lotteries that would make them eligible to attend AppleTree schools. What should seem like a great boon to the organization—increased demand—is a double-edged sword, notes Ann Zumo Malone: "As we've grown, we've attracted a more diverse population. One of our campuses has gone from 95 percent free and reduced-price lunch to 65 percent. While it's wonderful that the word is spreading, this changing demographic is something that the organization wrestles with." AppleTree wrestles because as an organization it has been, from inception, committed to serving the underserved. Within the public charter school context that it sees as the best mechanism for delivery of its services, however, AppleTree's schools cannot discriminate as to whom they expect—all residents of DC are eligible for the schools' lotteries.

AppleTree's changing demographics might raise questions about the sustainability of the organization's original mission and vision, but they also highlight the perception that *Every Child Ready* is a worthy model for early childhood education—for all types of students. This perception could be the strongest evidence of all that AppleTree is forging needed change in education. In a country where poor and wealthy students and black and white students are more segregated in their communities and in their schools than ever before,<sup>62</sup> AppleTree's schools are proving that it is possible to deliver a brand of public education that parents from all walks of life want for their children—an education that is marked by high expectations for student success



and ensures that every adult involved in the process of educating students is able to guide students to meet those expectations.

## **CONCLUSION AND RECOMMENDATIONS**

The AppleTree Institute, its Every Child Ready model, and its schools in Washington, DC are paving the way for needed change in the early childhood education sector. But the change that AppleTree is inciting will not come through disseminating its schools and its model alone, especially if change is to occur at scale and in the near future. This is why it is so important to understand and continue to uncover why the AppleTree model is so successful and how components of the model can be replicated in ways that maximize both the number of students that benefit and the outcomes that those students achieve. AppleTree was established to foster innovation and to close the achievement gap before it begins; to accomplish this second goal, especially, the Institute and its founders realize that it must function as a case study for understanding what works and for continually raising standards for excellence in early childhood education, whether publicly or privately funded.

There are many lessons to learn from what AppleTree has accomplished for the students that it serves, but four key levers for effecting change stand out:

### *Provide the Right Mechanisms for Delivery*

The AppleTree case makes clear that the delivery mechanism for high-quality early childhood programming makes a difference. Providers cannot be hampered by overregulation or onerous standards that focus on inputs and compliance as opposed to outcomes. Studies<sup>63</sup> confirm that in policy environments where they are given true autonomy in exchange for true accountability, charter schools work. The charter school delivery mechanism also works for publicly provided early childhood programming. The federal government should incentivize states to create charter policy environments that focus on providing charters with the right autonomies in exchange for true

accountability. State governments should likewise look to places where charters achieve the strongest outcomes, such as Massachusetts and New Orleans to better understand what conditions are most conducive to establishing charter policy environments that will work for early childhood education providers.

### *Focus on Outcomes*

In a policy environment that promotes accountability for outcomes, the outcomes that should be achieved must be clearly delineated and transparent. Providers of early childhood education should be held to account in the same manner as their K-12 counterparts and should likewise determine the outcomes that they need to help students achieve by understanding what students will need to know and be able to do for success in elementary school and far beyond. By working backwards to design rigorous curricula, as AppleTree did in designing *Every Child Ready*, early childhood providers can begin to close the achievement gap before it begins.

### *Foster Innovation*

AppleTree Institute is an entrepreneurial organization. It has flourished because it is built on good ideas and a commitment to a vision for changing education. But AppleTree has not accomplished all that it has with ideas alone. The federal government (through the provision of an *Investing in Innovation* grant) and several philanthropic organizations have invested in AppleTree and thus allowed it to turn good ideas into innovations that work and that can work for large numbers of students. Without these investments, AppleTree might not exist. It certainly would not have had the impact on students' lives that it has had to date.

### *Continue the Conversation*

The United States could be on the verge of an important turning point in education. With more widespread understanding of the potential for high-quality early childhood options to close the achievement gap, the country is poised to make a dramatic shift in how we educate students

and how we deliver on our promise for equality of educational opportunity. High-quality early childhood options should be seen as part and parcel of any initiative to raise the educational bar for all of America's students. It is a key to closing the achievement gap and to providing a higher overall quality of education for all students.

## About the Author

**Cara Stillings Candal** is currently the Director of Research and Curriculum at the Center for Better Schools/National Academy for Advanced Teacher Education. In this role, she works to provide targeted, differentiated professional learning opportunities for experienced educators from across the country that have been identified as highly effective by the districts, charter, and faith-based networks in which they work. Cara has worked in the field of education for fifteen years as a high school teacher, as a curriculum and large-scale assessment specialist for the Riverside Publishing Company, and as a Research Assistant Professor at the Boston University School of Education. In her role as researcher and educator at Boston University, her work focused on domestic and international policies affecting educational opportunities for low-income students. Cara is the author of numerous articles on the charter school movement, both nationally and in Massachusetts, and on the Elementary and Secondary Education Act. She is also the editor of the book *Partnering for Progress: Boston University, The Chelsea Public Schools, and Twenty Years of Urban Education Reform*.

**Sara Mead** is an Associate Partner with Bellwether Education Partners, a non-profit organization working to improve educational outcomes for low-income students. In this role, she writes and conducts policy analysis on issues related to early childhood education and K-12 education reform and provides strategic advising support to clients serving high-need students. She has written extensively on education issues including federal and state education policy, charter schools, teacher effectiveness, and early childhood education. Her work has been featured in numerous media outlets including *The Washington Post*, *New York Times*, and *USA Today*. She serves on the District of Columbia Public Charter School Board, which authorizes charter schools in the District of Columbia and holds them accountable for results, and on the board of Democrats for Education Reform.

## About Pioneer

Pioneer Institute is an independent, non-partisan, privately funded research organization that seeks to change the intellectual climate in the Commonwealth by supporting scholarship that challenges the “conventional wisdom” on Massachusetts public policy issues.

## Recent Publications

*Giving Kids Credit: Using Scholarship Tax Credits to Increase Educational Opportunity in Massachusetts*, White Paper, July 2014

*Hard Lessons for Institutional Investors from the MBTA Retirement Fund*, White Paper, July 2014

*Meeting the Commonwealth's Demand: Lifting the Cap on Charter Public Schools in Massachusetts*, White Paper, July 2014

*Regaining Massachusetts' Edge in Research and Development*, White Paper, June 2014

*How to Address Common Core's Reading Standards: Licensure Tests for K-6 Teachers*, White Paper, May 2014

*Cogs in the Machine: Big Data, Common Core, and National Testing*, White Paper, May 2014

*The Dying of the Light: How Common Core Damages Poetry Instruction*, White Paper, April 2014

*Common Core's Validation: A Weak Foundation for a Crooked House*, White Paper, April 2014

*Does Boston Convention & Exhibition Center Expansion Really Pay for Itself?*, Policy Brief, March 2014

*Matching Students to Excellent Teachers: How a Massachusetts Charter School Innovates with Teacher Preparation*, White Paper, February 2014



## Endnotes

1. Duncan, Greg and Sojourner, Aaron (2014) "Can intensive early childhood programs eliminate income-based cognitive and achievement gaps?" *Journal of Human Resources*, 48(4), 945-968.
2. Early Learning, "Preschool for All," <http://www.whitehouse.gov/issues/education/early-childhood>, accessed May 21, 2014.
3. Ibid.
4. National Institute for Early Education Research, (NIEER), (2014) *The State of preschool*, 2013, The State University of New Jersey, Rutgers, 5. <http://nieer.org/publications/state-preschool-2013>, accessed May 1, 2014.
5. See: <http://www.childrensdefense.org/policy-priorities/early-childhood-education-care/full-day-kindergarten.html>, accessed June 10, 2013.
6. Ibid.
7. NIEER *The State of preschool*, 2013, 6.
8. Russ, Grover J. & Armor, David J. (2013) "Obama's preschool proposal is not based on sound research," The Brown Center Chalkboard, Brookings, <http://www.brookings.edu/blogs/brown-center-chalkboard/posts/2013/07/24-preschool-proposal-whitehurst>.
9. New America Foundation, Federal education budget project, "Federal state and local school finance overview," downloaded from: <http://febp.newamerica.net/background-analysis/school-finance>, accessed June 10, 2014.
10. Correspondance with Jack McCarthy, AppleTree Institute President and CEO, June 3, 2013.
11. National Head Start Association, "Research Blast, 2013," downloaded from: [http://www.nhsa.org/research\\_blast\\_september\\_2013](http://www.nhsa.org/research_blast_september_2013), accessed July 3, 2014.
12. Hart, Betty & Risley, Todd (2003) "The early catastrophe: the 30 million word gap by age 3," *American Educator*, American Federation of Teachers, downloaded from <https://www.aft.org/pdfs/americaneducator/spring2003/TheEarlyCatastrophe.pdf>, accessed June 10, 2014.
13. The AppleTree Institute, "Every Child Ready" accessed April 30, 2014, <http://www.appletreeinstitute.org/every-child-ready/>.
14. The AppleTree Institute, Student Achievement Comparisons (internal document).
15. "AppleTree Institute wins \$5 million I3 award for its *Every Child Ready Model*" (Sept. 20, 2013), PR Newswire, <http://www.prnewswire.com/news-releases/appletree-institute-wins-5-million-i3-award-for-every-child-ready-model-103293264.html>, accessed May 1, 2014.
16. Barnett, Steven W. & Frede, Ellen, "The promise of preschool: why we need early education for all" (Spring 2010) *American Educator*, American Federation of Teachers.
17. Schweinhart, L.J., H.V. Barnes, and D.P. Weikart. (1993). Significant Benefits: The High/Scope Perry Preschool Study through Age 27. (Monographs of the High/Scope Educational Research Foundation, 10). Ypsilanti, MI: High/Scope Press.
18. Barnett & Frede (2010), 24.

19. "Social programs that work," "Perry Preschool Project," <http://evidencebasedprograms.org/1366-2/65-2>, accessed May 1, 2014.
20. Schwienhart, Lawrence, (June, 2002), "How the HighScope Perry Preschool Study grew: a researcher's tale," Phi Delta Kappa Center for Evaluation, Development, and Research, downloaded from <http://www.highscope.org/Content.asp?ContentId=232>, accessed May 15, 2014.
21. "Social programs that work," "Perry Preschool Project,"
22. in Barnett & Frede (2010), 25-26.
23. See: <http://www.brookings.edu/blogs/brown-center-chalkboard/posts/2013/01/23-prek-whitehurst>.
24. Henry, Gary T.; Gordon, Craig S.; Rickman, Dana K., (2006), Educational Evaluation and Policy Analysis, v28 n1, 93.
25. See: <http://eclkc.ohs.acf.hhs.gov/hslc/standards/hspss> for the standards
26. "Head Start Impact Study, Final Report," (2010), Department of Health and Human Services pp. iv-v.
27. NIEER The State of preschool, 2013, p. 6, p. 10.
28. "Early childhood education for all: A wise investment (2004), Legal Momentum Family Initiative and MIT Workplace Center, p. 1. Downloaded from: <http://web.mit.edu/workplacecenter/docs/Full%20Report.pdf>, accessed April 13, 2014.
29. Cassidy, John. "The education of Bill DiBlasio," March 31, 2014, "Rational Irrationality," downloaded from <http://www.newyorker.com/online/blogs/johncassidy/2014/03/the-education-of-bill-de-blasio.html>, accessed April 5, 2014.
30. Interview with Jack McCarthy, AppleTree Institute President and CEO, April 17, 2014.
31. See: <http://www.nichd.nih.gov/research/supported/Pages/nrp.aspx/>, accessed June 10, 2014.
32. Interview with Jack McCarthy.
33. AppleTree Institute, "About," <http://www.appletreeinstitute.org/about/history/>, accessed May 20, 2014.
34. Svrluga, Susan (2013), "In DC Public school for 3 year olds is already the norm," *The Washington Post*, downloaded from, [http://www.washingtonpost.com/local/education/in-dc-public-school-for-3-year-olds-is-already-the-norm/2013/02/20/e1f84426-7b6a-11e2-82e8-61a46c2cde3d\\_story.html](http://www.washingtonpost.com/local/education/in-dc-public-school-for-3-year-olds-is-already-the-norm/2013/02/20/e1f84426-7b6a-11e2-82e8-61a46c2cde3d_story.html), accessed May 13, 2014.
35. Layton, Lyndsey, "DC schools have largest black white achievement gap in federal study," *The Washington Post*, December 11, 2011. Downloaded from: [http://www.washingtonpost.com/local/education/dc-schools-have-largest-black-white-achievement-gap-in-federal-study/2011/12/06/gIQArNnMcO\\_story.html](http://www.washingtonpost.com/local/education/dc-schools-have-largest-black-white-achievement-gap-in-federal-study/2011/12/06/gIQArNnMcO_story.html), accessed May 25, 2014.
36. Appletree Institute, "About."
37. AppleTree Institute, "Every Child Ready," <http://www.appletreeinstitute.org/every-child-ready/>.
38. Interview with Lydia Carlis, AppleTree Institute, Chief of Research and Innovation, November 22, 2013.
39. Ibid.
40. AppleTree Institute, *Every Child Ready*, <http://www.appletreeinstitute.org/every-child-ready/current-products/>.

41. Interview with Ann Zumo Malone, AppleTree Institute Chief of Schools, November 11, 2013.
42. Interview with Ann Zumo Malone.
43. Samuels, Christina, A. “preschool network puts innovation grant to the test.” *Education Week*, April 10, 2014.
44. Interview with Lydia Carlis.
45. Ibid.
46. See, for example: Rivkin, S.G., Hanushek, E.A., and Kain, J.F., “Teachers, Schools, and Academic Achievement,” *Econometrica*, Vol. 73, No. 2 (March 2005), pages 417–458.
47. Barnett & Frede (2010).
48. Interview with Jack McCarthy.
49. Lesiak, Marianne (2011) “Teacher preparation, outcomes for young children, and NCTQ survey,” downloaded from: <http://www.appletreeinstitute.org/blogs/teacher-preparation-outcomes-for-young-children-nctq-survey/>, accessed May 27, 2014.
50. Ibid.
51. Interview with Lydia Carlis.
52. See, for example, Thompson, John. “The obituaries for data-driven reform are being written.” *Huffington Post*, May 12, 2011, [http://www.huffingtonpost.com/john-thompson/the-obituaries-for-datadr\\_b\\_859144.html](http://www.huffingtonpost.com/john-thompson/the-obituaries-for-datadr_b_859144.html), accessed June 17, 2014.
53. Interview with Lydia Carlis.
54. “2012-2013 student assessment data, overview” (2013) AppleTree Institute (internal document), p. 2.
55. Ibid.
56. Ibid.
57. Ibid, p. 6.
58. Interview with Jack McCarthy.
59. Interview with Jack McCarthy.
60. AppleTree Strategic Plan, July 22, 2013, internal document.
61. Ibid.
62. Orfield, Kucsera & Siegel-Hawley (2012), “E pluribus. . .separation: deepening double segregation for more students,” The Civil Rights Project, UCLA, <http://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/mlk-national/e-pluribus...separation-deepening-double-segregation-for-more-students>, accessed June 10, 2013.
63. See, for example: Center for Research on Educational Outcomes (CREDO) (2013): “National charter school study,” Stanford University, <http://credo.stanford.edu/documents/NCSS%202013%20Final%20Draft.pdf>, accessed June 10, 2014.





This report was prepared by Pioneer Institute for Public Policy Research in Boston, Massachusetts, and is for informational purposes only. The information herein is believed to be reliable; all data have been obtained from sources that are believed to be accurate, but Pioneer Institute makes no representation as to their correctness or completeness. This report comes with no warranty, implied or explicit. The opinions, estimates and projections herein are solely those of the respective authors as of the time of its preparation and are subject to change without notice. Past performance does not guarantee future results. Pioneer Institute, its fiduciaries and the authors may engage in financial transactions and employ accounting methods inconsistent with the views taken in this report on others' and on their own behalf.

Copyright © 2014 Pioneer Institute for Public Policy Research. All rights reserved.

**PIONEER INSTITUTE**  
PUBLIC POLICY RESEARCH

185 Devonshire Street, Suite 1101 | Boston, MA 02110 | 617.723.2277  
[www.pioneerinstitute.org](http://www.pioneerinstitute.org) | [Facebook.com/PioneerInstitute](https://www.facebook.com/PioneerInstitute) | [Twitter.com/PioneerBoston](https://twitter.com/PioneerBoston)