



# INVESTING IN EARLY EDUCATION PAYS OFF:

Long-term studies & examples to bolster  
your case for Pre-K

# INTRODUCTION

## National Preschool Trends



State and federal investments in preschool are growing. Total state funding for preschool programs increased for the fourth year in a row last year to nearly \$7 billion, according to The Education Commission of the States. And the federal Every Student Succeeds Act (ESSA) increases funding for early childhood education in three ways—Title I funding, Title II funding and Preschool Development Grants.



While we have made some progress as a country in public funding, we still need many improvements in access and equity. An estimated 46 percent of 3- and 4-year-olds still lack access to preschool in any form, public or private, according to the National Center for Education Statistics. Even fewer have access to high-quality programs: a staggering 52 percent of low-income children and 25 percent of moderate- to high-income children arrive on the first day of kindergarten unprepared.

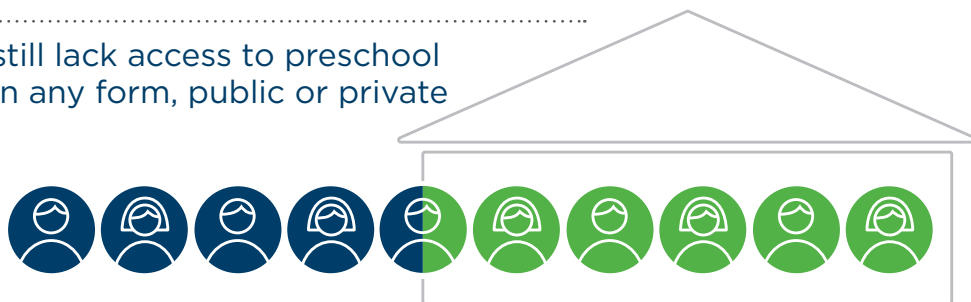
Access also varies by geography, race and income. Five states still have no publicly funded preschool programs. In 2014, the NCES reported a lower percentage of Hispanic and African American 3- to 5-year-olds (32 percent and 39 percent, respectively) were enrolled in preschool programs than of White (41 percent) 3- to 5-year-olds. And children from low-income families are less likely to be enrolled in preschool than their more affluent peers, according to the US Department of Education.

A robust and growing body of research shows children who participate in high-quality preschool programs have better health, social-emotional, and cognitive outcomes than those who do not participate. The gains are particularly powerful for children from low-income families and those at risk for academic failure.

Here we cover two recent studies that show longitudinal benefits for two different types of kindergarten readiness efforts: a traditional preschool program and a home-based kindergarten readiness program.

# 46% OF 3- AND 4-YEAR-OLDS

still lack access to preschool in any form, public or private



Source: National Center for Education Statistics, Digest of Education Statistics 2015

Total state funding for preschool programs increased by \$755 million to a total of nearly \$7 billion. This is a 12 percent increase over the 2014-15 spending levels.

- Education Commission of the States, 2016 report



# NEW RESEARCH

## Long-Term Studies Show Big Gains with Pre-K

### **STUDY 1** How Investing in Pre-K Beats the Stock Market

“Start at birth, coordinate services into comprehensive early childhood programs and achieve greater economic and social gains,” recommends James J. Heckman, Nobel Laureate economist and colleagues from the University of Chicago and the University of Southern California’s Schaeffer Center.

High quality birth-to-five programs for disadvantaged children can deliver an annual **13% RETURN ON INVESTMENT**

—James Heckman, from *Lifecycle Benefits*

Their groundbreaking study, “The Lifecycle Benefits of an Influential Early Childhood Program,” shows high quality birth-to-five programs for disadvantaged children can deliver a 13.7 percent per child, per year return on investment. That’s a substantially higher rate than the 7-10 percent return previously established for preschool programs serving 3- to 4-year-olds. For added context, that’s also better than average stock market returns.

## How the Study Worked

Most existing research on the effectiveness of early childhood programs focuses on short-term academic gains. Heckman and his colleagues sought long-term evidence that would be relevant for policy analysis.

To do this, they evaluated two virtually identical early childhood programs by random assignment. The North Carolina-based programs—the Carolina Abecedarian Project and Carolina Approach to Responsive Education—were founded in the 1970s and served mostly low-income, African American children.

The programs focused on early-language, motor, and cognitive development, as well as social-emotional skills. Both served as blueprints for others around the world. Babies entered the programs when they were eight weeks old and were cared for five days a week during working hours, 50 weeks a year, until age 5.

Researchers collected data from birth through age 8 on a wide range of school and home life factors as well as long-term follow-ups through age 35. The lives and outcomes of the children who participated in the programs were compared to the lives and outcomes of a control group of children, including some who stayed home with their mothers and others who attended low-quality day care.

## The Benefits

The study analyzed a wide variety of life outcomes, and lifetime returns were estimated by pooling these multiple data sets using testable economic models.

The results? Children who participated in the programs had significantly better life outcomes than the control group.

Researchers found the children benefited in terms of reduced crime, increased income, reduced special education costs and higher educational attainment. The program also had benefits for their mothers, who gained more education, work experience and higher wages. “It promotes social mobility within—and across—generations,” Heckman told NPR. “That I think is an important finding of this study.”

The more comprehensive zero-to-five programs studied cost about \$18,500 per year for each child enrolled. But Heckman and his research team found that for every dollar invested, the program generated a societal benefit of \$6.30—a return of \$116,550 dollars saved in remedial and social programs per child.

“The gains are significant because quality programs pay for themselves many times over,” the researchers write. “The cost of inaction is a tragic loss of human and economic potential that we cannot afford.”

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## Children in the zero-to-five programs were:



**more likely to graduate  
from high school**



**less likely to be  
incarcerated**



**had higher IQs**



**were healthier during  
the course of their lives**

## Their mothers were:



**more likely to  
get further education**



**more likely to  
advance at work**



**have a  
higher income**

# A CLOSER LOOK

## CASE STUDY

### **How One of the Country's Largest School Districts Added Differentiated Instruction in Pre-K**

As the eighth largest school district in the United States, Hillsborough County has seen its share of achievement gaps in incoming kindergarteners. To help address this complex issue, the district implemented a robust Head Start program that provides whole-child learning for preschoolers and engagement for their families.

Hillsborough County Head Start is a delegate to the Hillsborough Board of County Commissioners and serves more than 2,000 preschoolers in 92 classrooms across 54 schools. All families served by the program live below the poverty level and largely represent migrant Hispanic and African American families.

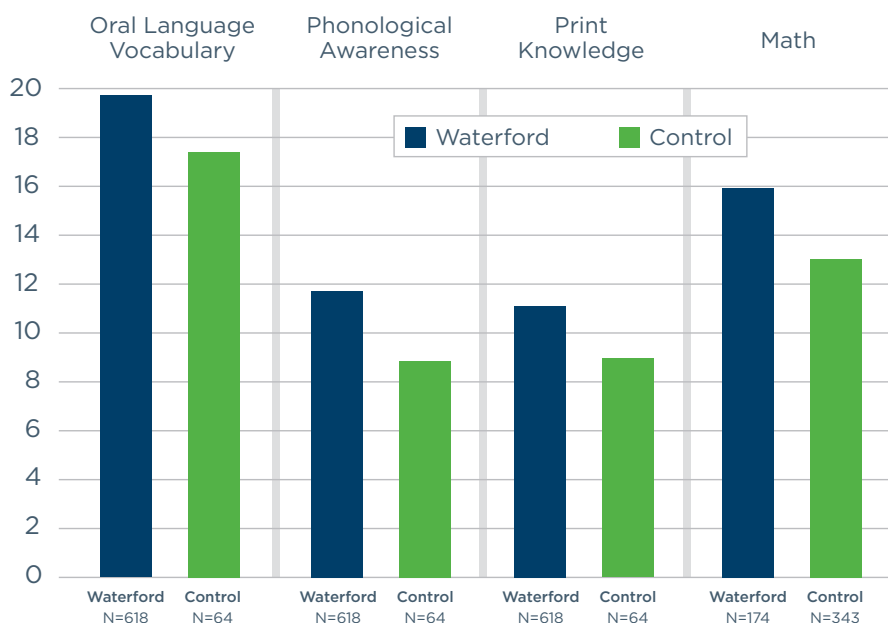
Fully accredited by The National Association for the Education of Young Children (NAEYC) and A National Program of Excellence, Hillsborough County Head Start is a quality program. Still, its leaders recognized areas for improvement in both curriculum and teacher professional development to help identify and close achievement gaps early.

#### **Adding Differentiated Instruction**

To meet these goals, Hillsborough County added Waterford Pre-K curriculum and professional development services to its program. For differentiated learning, each child received 15 minutes daily of Waterford's computer-based individualized lessons that adapt to their needs and level. For whole-class and small-group learning, teachers supplemented their core curriculum with Waterford Classroom Advantage's engaging interactive whiteboard activities.

Hillsborough County had a Waterford Implementation Specialist dedicated to their district to provide whole group professional development, classroom modeling, family training sessions, coaching, progress monitoring, and consultation on next steps. In collaboration with Waterford team members and Hillsborough County leaders, customized playlists and other resources were developed that aligned to their assessments and curriculum. Teachers also took a series of virtual educator courses. To enhance Hillsborough's family outreach, Waterford provided family training sessions, Homelink newsletters, books, and DVDs to send home with each child.

### More Waterford usage means more student gains.



Waterford has definitely made a difference within the last year with all of our students—especially in the areas of literacy, language, and math. Our dual language learners are showing the greatest gains.

– Evelyn McFadden,  
Hillsborough County's  
Head Start Supervisor

# NEW RESEARCH

## Long-Term Studies Show Big Gains with Pre-K

### **STUDY 2** An Innovative At-Home Program

But what if children don't have access to quality preschool programs? Can we give them access to some of Heckman's quality components at home and still see results? One state set out almost a decade ago to find out and its longitudinal research is staggering.

While Heckman's research focused on more traditional preschool programs, another recent longitudinal study also found positive long-term results for an innovative home-based kindergarten readiness program.

UPSTART combines adaptive learning software from the Waterford Institute, a nonprofit research center and curriculum producer, with a high-touch parent engagement program to give preschool-aged children individualized reading, math and science instruction at home.

UPSTART's easy-to-use program makes it possible for children to work independently and gets them excited about learning with engaging books, songs, and activities. Its adaptive learning software gives each student a unique learning experience focused on his or her exact needs. A remedial program helps children who are struggling, and families who qualify are given free computer and Internet use.

Meanwhile, UPSTART's parent engagement program works to get parents involved early and deeply. Caregivers are partnered with a support team member who provides data on their child's usage and performance as well as motivational tips and support in English or Spanish. Through

parent trainings and weekly outreach via phone, email, or in person, UPSTART creates a family culture around reading and learning together.

### **What the Research Shows**

Utah is one of eight regions across the U.S. running the UPSTART program. It's also the longest-running and largest implementation. Since 2009, the program has served over 20,000 families and has 11,000 families in the program this year alone.

Annual external studies of Utah UPSTART show year after year that children who participate in the program have significantly stronger learning rates on two common standardized tests—the Bader and Brigance—than children in a control group.

A recent independent study published by the Utah State Office of Education showed the longitudinal impact of the program for the first time.

Once again, the research showed UPSTART significantly increased literacy skills for preschool-age children—especially among at-risk populations. UPSTART participants scored an effect size of 0.81 on total Brigance Composite and 0.95 on total Bader Composite. UPSTART participants also scored significantly higher



# Build Kindergarten Readiness

An independent evaluator measured the difference between the Waterford group and the control group, referred to as the effect size. Effect sizes are categorized as small (0.2), medium (0.5), and large (0.8).

.81

Waterford’s effect size on total Brigance composite scores

.95

Waterford’s effect size on total Bader composite scores

11 of 13

Number of Bader and Brigance subtests where UPSTART participants scored significantly higher

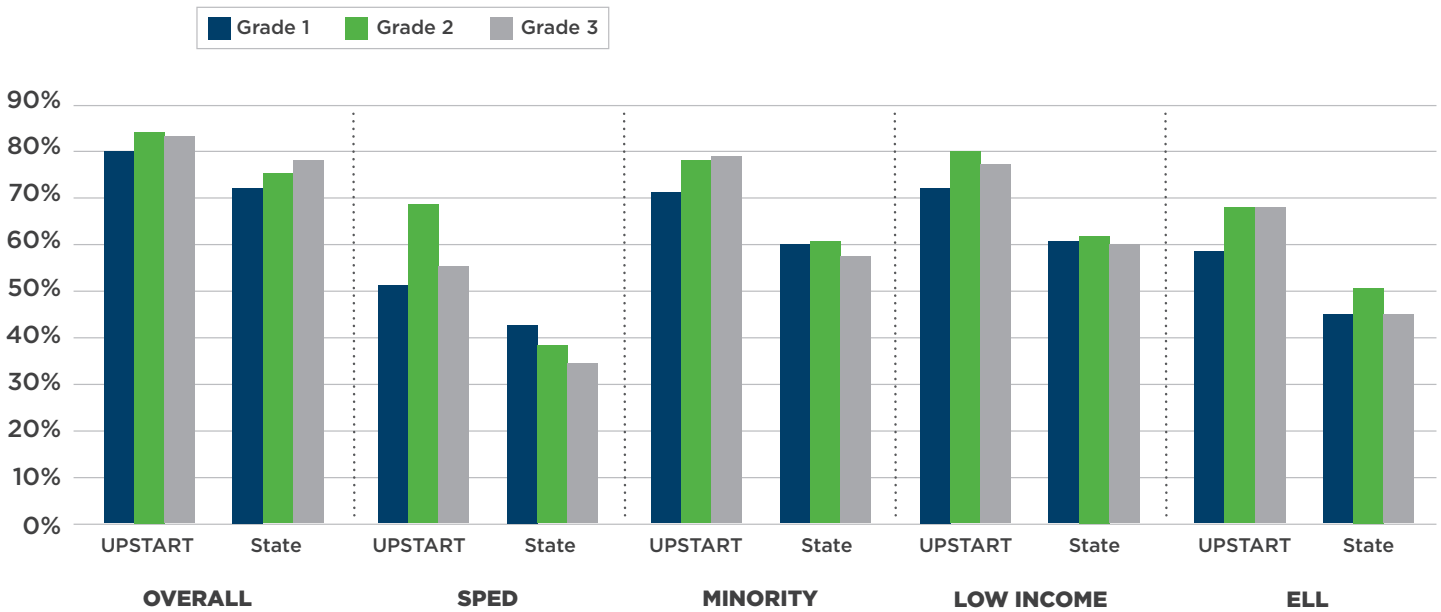
on eleven of the thirteen Brigance and Bader subtests on the posttest. In most cases, the difference between UPSTART participants and the state average scores was greater for English language learners, children from low-income households, minorities, and children with special education status.

Longitudinal data showed those gains lasted beyond kindergarten with participants still outperforming state averages on standardized tests in grades first through fourth in language, arts, math and

science. Some of the greatest gains were made by at-risk student populations, including dual language learners, low-income, minority and special education students.

“UPSTART is a great option for children who may not have access to other high-quality Pre-K programs, or for those who might need additional academic support in the home,” Claudia Miner, UPSTART’s director, said. “This research shows it brings lasting academic growth to students, while also engaging families early in their child’s education.”

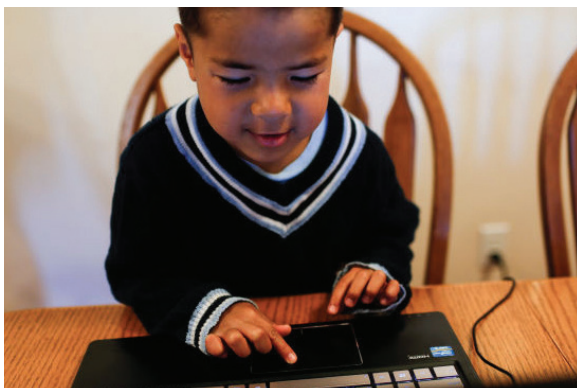
## DIBELS Longitudinal data showed UPSTART participants outperformed state averages on standardized tests in grades 1, 2 and 3.



# A CLOSER LOOK

## CASE STUDY

### How UPSTART Works



#### Need

Community needs a high-quality, affordable program to:

reach and academically prepare children for school before they enter kindergarten;

engage caregivers in their child's education early;

support families with resources and tips to create a family culture of learning together.



#### Solution

State, school district or community partner funds UPSTART; Waterford implements the program.

Families register for UPSTART and receive training.

Qualifying families are provided with free Internet and a computer to use.

Children use the program 15 minutes, 5 days a week.

Every family is partnered with a Personal Care Representative who monitors their child's progress throughout the year.



#### Outcomes

Children are academically prepared to enter kindergarten.

Struggling learners receive support before they begin school.

Families are involved in their child's education early on.

Long-term intervention costs are reduced.

## Encouraging Parental Involvement

Research shows effective parental involvement comes when a true partnership exists between educational programs and families, and that such partnerships positively impacts student achievement.

130000+

### Parents & Caregivers Voluntarily Completed UPSTART Program Evaluation

99.7% said participating in UPSTART was beneficial

99.3% would recommend the program to family and friends

99.3% felt UPSTART helped prepare their child for kindergarten



## Reaching Rural Communities



In 2013, Waterford was awarded an \$11.5 million federal i3 grant to further expand and study UPSTART in rural Utah communities. The 5-year study has demonstrated the program's effectiveness working directly with school districts to prepare children for school.

44%

of Utah's  
school districts  
are rural

100%

of those rural districts  
are participating in the  
UPSTART i3 research study



