

# Building a Stronger Commonwealth: The Business Case for Investing in Pennsylvania's Youngest Learners



*“No economy can succeed without a high-quality workforce, particularly in an age of globalization and technical change... Research increasingly has shown the importance for both individuals and the economy as a whole of both early childhood education as well as efforts to promote the lifelong acquisition of skills. The payoffs of early childhood programs can be especially high.”*

—Ben Bernanke, Chairman, Federal Reserve Board

## Introduction

Today more than ever, businesses need employees who are well prepared to succeed in a competitive economy. But the current workforce pipeline is not sufficient—not for businesses that need highly-skilled staff, not for young people who need good paying jobs, and not for the nation that needs a growing economy.

When processes fail, business leaders do not look for solutions after the fact—they look upstream to prevent them from happening in the first place. The foundation for success starts in the earliest years of children's lives, when they begin to develop the knowledge, skills, and behaviors they need to do well in school and beyond. To fix our failing workforce pipeline, we need to help our children get the good start in life that will enable them to succeed.

## The skills gap

The nation is struggling to produce qualified workers. According to the National Assessment of Educational Progress, only 26 percent of 12th grade students are proficient in math and 38 percent are proficient in reading. In Pennsylvania, only 48 percent of fourth graders and 39 percent of eighth graders are proficient in math, and 41 percent of fourth graders and 38 percent of eighth graders are proficient in reading. These skill deficiencies

track back to the earliest years. The achievement gap opens as early as nine months of age, and disadvantaged children can start kindergarten as much as 18 months behind their peers.

In addition to so called “hard skills” such as math and reading, people need skills like critical thinking, creativity, collaboration, and communication for success in today's workplace. In a 2010 survey by the American Management Association, three out of four executives reported that these “soft skills” are increasingly important in today's business environment, but they said that less than half of employees were rated as above average in these skills.

Too many people lack both skill sets at a time when American companies are demanding more. In a 2011 survey of manufacturers, 67 percent of respondents reported a moderate to severe shortage of available, qualified workers and 56 percent anticipated the shortage to grow worse in the next three to five years. Pennsylvania faces the same type of challenge. One study predicts that by 2018, one million of the projected 1.8 million vacancies will require postsecondary credentials. By that time, 57 percent of all Pennsylvania jobs will require postsecondary education.

An unprepared workforce comes at a cost to society and the economy. The average annual income for a high school dropout in 2009 was \$20,241, compared to \$30,627 for a high school graduate, \$39,771 for an Associate's degree, and \$56,665 for a Bachelor's degree. The estimated additional lifetime income if Pennsylvania's dropouts had graduated with their class in 2011 was over \$4 billion.

### Starting early to fix the skills gap

The skills gap means that too often businesses spend time remediating basic skills and developing good workplace habits and not on actual job-specific training. Investing in high-quality early childhood care and education is an effective way to meet this challenge.

Science tells us that early experiences shape the development of a young child's brain, or "brain architecture." Simple skills come first; more complex skills build on top of them (figure 1). A strong foundation in the early years improves the odds for positive outcomes and a weak foundation increases the odds of problems later in life. This strong foundation is laid through nurturing early environments, good nutrition, health care, and high-quality early learning experiences.

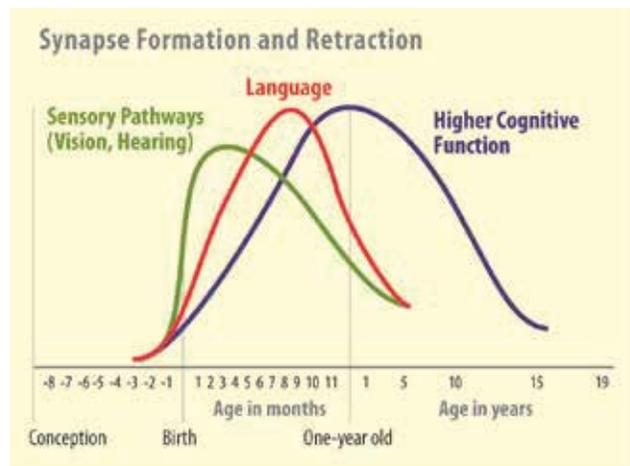
Development can be derailed when a child's stress response system is activated excessively, through lack of nurture, exposure to violence, or similar situations. Learning how to cope with moderate, short-lived stress can build a healthy stress response system, but excessive "toxic stress" can weaken brain architecture.

Results from the Adverse Childhood Experiences (ACE) Study from Center for Disease Control showed that persons who had experienced four or more categories of childhood exposure to ACEs, or "toxic stress," compared to those who had experienced none, were more likely to adopt high risk behaviors, leading to a greater propensity for severe health problems and possible early death. ACEs include emotional, physical, or sexual abuse, emotional or physical neglect, and exposure to household dysfunction such as alcoholism, drug use and spousal abuse. These experiences are detrimental to healthy

*"Pennsylvania's early childhood programs are critical to continued economic success. For the commonwealth to thrive, we need to continue to invest in our youngest learners."*

—Jack Brennan, Chairman Emeritus & Senior Advisor, Vanguard

Figure 1: Human brain development is greatest at a very young age



SOURCE: C.A. Nelson in Jack P. Shonkoff and Deborah A. Phillips, eds, *From Neurons to Neighborhoods: The Science of Early Childhood Development*, National Academy Press (2000), p. 188.

development and costly to society (figure 2). The good news is that high quality early childhood programs can begin to address these issues. Systems that support the quality of relationships in early care settings, communities, and homes help build the brain architecture that lays the foundation for a child's success.

Figure 2: Costs to Society

The CDC estimates that the lifetime costs associated with child maltreatment at \$124 billion.



\*Includes Special Education, Child Welfare, and Criminal Justice.

### Benefits of Pennsylvania's early childhood programs

Pennsylvania has a comprehensive early childhood system. Nearly two-fifths (38 percent) of Pennsylvania's children under age 5 participate in publicly-funded early education programs such as Early Intervention, Head Start, Keystone STARS, Nurse-Family Partnership, Parents as Teachers, and Pennsylvania Pre-K Counts.

And this system is yielding results. After attending one of Pennsylvania's high-quality early education programs in 2011-2012 (Pennsylvania Pre-K Counts, Keystone

**Pennsylvania's Commitment to Quality:** Keystone STARS is an initiative of the Office of Child Development and Early Learning (OCDEL) to improve, support, and recognize the continuous quality improvement efforts of early learning programs in Pennsylvania. It is one of the largest and most mature quality rating and improvement systems in the nation.

Rising STARS—an OCDEL initiative—was developed to promote greater access for at-risk children to higher quality child care and better prepare them to succeed in school. This initiative makes it more attractive and sustainable for child care providers to earn a high quality STAR 3 or 4 rating and serve a larger percentage of children receiving Child Care Works subsidy.

STAR 3 and 4 centers and Head Start Supplemental Assistance Programs), the percentage of children with age-appropriate language, math and social skills more than doubled.

Penn State University's Prevention Research Center for the Promotion of Human Development completed a study of the **Harrisburg Preschool Program (HPP)** in 2011. The researchers found that third-graders who participated in HPP scored significantly higher on Pennsylvania System of School Assessment (PSSA) tests than did a matched group of students who did not take part in HPP (58 percent vs. 29 percent advanced/proficient in math, 45 percent vs. 23 percent advanced/proficient in reading). These gains persisted through fifth grade (35 percent vs. 19 percent advanced/proficient in math, 22 percent vs. 8 percent advanced/proficient in reading).<sup>19</sup> In addition several local communities have observed encouraging signs from children participating in pre-k programs:

- **Pottstown School District** officials reported 94 percent of its PA Pre-K Counts students scored at grade level on literacy assessment in kindergarten, compared with 85 percent of the overall school district.
- **The Tyrone Area Elementary School District** reported children participating in district preschool fared better than non-district preschool participants on third grade PSSA scores in math and reading (97 percent vs. 87 percent in math and 95 percent vs. 80 percent in reading).

*“Exposing at-risk children to high quality pre-k has had demonstrated success in making our kids ready to learn. That preparation positions children for continued success throughout school and life.”*

—Jeffrey R. Sparagana, Ed.D, Superintendent of Schools, Pottstown School District

- Students in the **Philadelphia School District** participating in formal pre-k care also fared better than non-participants on the same literacy assessment.

Because the evaluation design used in these studies cannot show a causal connection between the pre-k programs and later academic outcomes, additional evaluations, using better evaluation design, are needed to draw more definitive conclusions about the impact of the pre-k programs on these children.

### Programs across the nation show results

Rigorous, independent evaluations of various pre-kindergarten programs across the nation continue to reinforce the observations being made in Pennsylvania.

**Tennessee:** In a 2011 study, Vanderbilt University researchers found children participating in Tennessee's Voluntary Prekindergarten Program (VPK) *made significantly greater gains across all achievement measures during the pre-k year* than similar children not in VPK.

**New Jersey:** A 2013 study of New Jersey's Abbott Preschool Program shows that children in the state's most disadvantaged communities who participate in the pre-k program make significant gains in literacy, language, math and science; *and these gains persist through 4th and 5th grade.*

**New Mexico:** Children attending preschool saw gains in language, literacy, and math over those who did not attend, with *the state estimating a return of five dollars for every one dollar invested* according to the National Institute of Early Education Research in 2009.

**Michigan:** A 2012 study of Michigan's Great Start School Readiness program found *less grade retention through 12th grade and more on-time high school graduation.* The estimated reduction in grade retention generated cost-savings equal to about 40 percent of the cost of the pre-k program.



Seminal, longitudinal studies of early childhood programs for disadvantaged children such as the Perry Preschool Program, Chicago Child Parent Centers, and the Carolina Abecedarian Project show that, over time, participants in early childhood programs are less likely to be assigned to special education classes, more likely to graduate high school and enroll in college, less likely to engage in criminal activity, and more likely to be employed and earn higher wages.

### Short run economic pay-offs

**Reduced special education costs:** Economic modeling estimates that a quality pre-k program available to 20 percent of Pennsylvania's four year olds would yield savings sufficient to offset 26 percent to 31 percent of the pre-k program costs, including \$68 million in reduced special education costs.

**Economic stimulus and job creation:** Projections estimate that for every dollar Pennsylvania invests in early childhood programs, more than two dollars is circulated throughout local economies through employment and purchasing of goods and services; and for every ten jobs created in the Pennsylvania early care and education sector, three jobs are created outside that sector.

**Current workforce productivity:** Twenty-one percent of children in Pennsylvania under age six are from low-income working families. A 2007 survey of families showed that nine percent of Pennsylvania families reported having someone in the family have to quit a job, not take a job, or greatly change a job because of problems with child care. Pennsylvania's Child Care Works subsidy program helps parents balance work and family by providing financial support for child care, improving families' access to high-quality, affordable child care services and information.

### Conclusion

A variety of rigorous studies show that supporting children in the earliest years—especially before kindergarten—can help start them down a path toward academic achievement and vocational success. Children who have these supports have a better chance to enter kindergarten ready to learn, read at grade level by third grade, graduate from high school, attend post-secondary education and/or enter the job market as a tax-paying citizen.

Pennsylvania is a leader among states with its comprehensive early childhood system and commitment to quality. The commonwealth must continue its commitment to children for the state to thrive in the future.

*ReadyNation, a project of America's Promise Alliance, is a business partnership for early childhood and economic success. Our mission is to amplify the voice of business leaders in support of early childhood policies and programs that strengthen our economy and workforce. ReadyNation is a key component of Grad Nation, a large and growing movement of individuals, organizations, and communities working together and with America's Promise to end the dropout crisis.*

#### Add your voice.

Contact us at: ReadyNation

(202) 657-0600

[info@readynation.org](mailto:info@readynation.org)

[www.readynation.org](http://www.readynation.org)

twitter: @Ready\_Nation

[www.Facebook.com/ReadyNationAPA](http://www.Facebook.com/ReadyNationAPA)

Citations are available at [www.ReadyNation.org](http://www.ReadyNation.org).

This report was written by William Carpluk, with research assistance from Michelle Hill, Educational Research Associate 2, Pennsylvania Office of Child Development and Early Learning



ReadyNation | America's Promise Alliance

1110 Vermont Avenue NW, Suite 900 | Washington, DC 20005