



Pre-K Matters for Tennessee Children

Long-Term Benefits of Pre-Kindergarten Far Outweigh the Costs

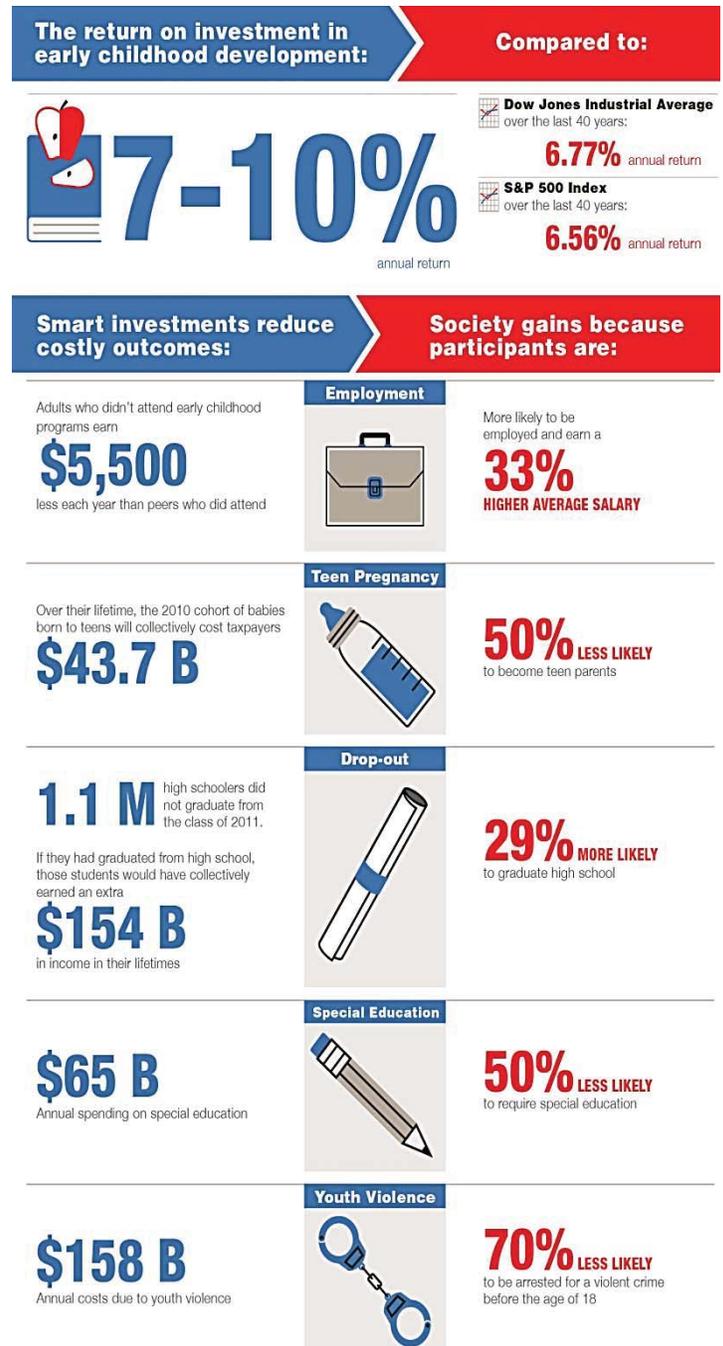
Every single study that has examined the long-term effects of pre-K has reached the same conclusion: children who attend pre-K enjoy benefits from the program for the rest of their lives. Those benefits contribute to savings for taxpayers that—according to every study on the subject—far outweigh the costs. Pre-K is one of the best investments the public can make in terms of returns to taxpayers.

Studies show that, in addition to short-term academic advances, compared to children who did not attend pre-K, children who did attend enjoyed multiple life-long positive effects.

In several studies at the state and national level, children who attended pre-K were

- Less likely to require special education;
- More likely to graduate from high school;
- More likely to have jobs;
- Earning higher salaries;
- More likely to own a home;
- More likely to have a savings account;
- Less likely to have ever depended on welfare programs;
- Less likely to have been arrested; and
- Less likely to become parents as teenagers.¹

These benefits translate into taxpayer savings, making pre-K one of the best investments taxpayers can make, with studies showing returns of between \$4 and \$16 for every \$1 spent on pre-K education. These returns were larger for children who entered pre-K with more disadvantages, as their likelihood of negative outcomes without pre-K was stronger, but it is repeatedly shown to be a solid investment for all children.



Why Do These Long-Term Benefits of Pre-Kindergarten Matter?

In its report entitled *A Commitment to Pre-Kindergarten is a Commitment to National Security*, Mission: Readiness sounds the alarm that nationally more than one in five high school graduates who tried to join the Army were rejected because they could not score well enough on the entrance exam. As is clear from the map below, that number is actually one in four in Tennessee.²

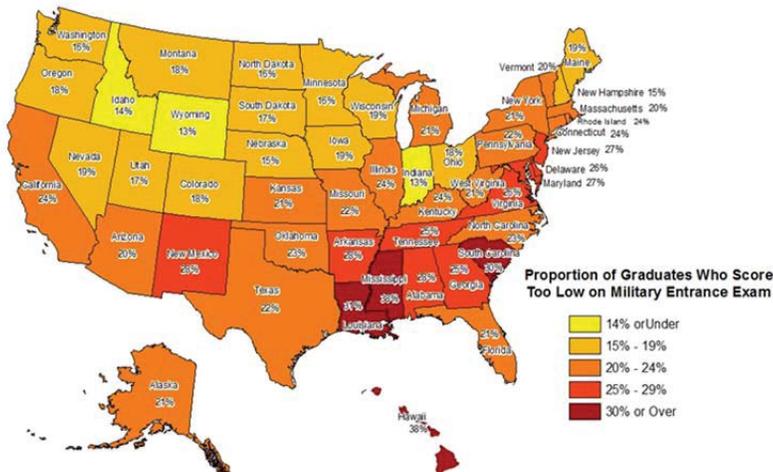
Mission: Readiness research shows that “high-quality early childhood education can prepare children to start school ready to learn. It can improve student performance, boost high school graduation rates, [and] deter youth from crime.”³

“Even when you lowball the numbers on what this ten year investment in prekindergarten could produce, you get \$150 billion in net benefits and 2 million more young people graduating from high school. That will strengthen America.”

*Lt. Gen. Norman R. Seip
US Air Force (Ret.)*

Proportion who Score Too Low

Out of those who do graduate and try to join the army, **over 1 in 5 cannot enlist** because they score too low on the military’s entrance exam.



<http://missionreadiness.s3.amazonaws.com/wp-content/uploads/MR-ASVAB-Grad-Rates-Map-08.png>



In a report entitled *I’m the Guy You Pay Later*, sheriffs, chiefs and prosecutors from across the nation urged policymakers to invest in high-quality early education and care to reduce crime and save money.⁴

“My jail is filled with people who took the wrong path in life. It didn’t have to be that way. Law enforcement leaders nationwide know that one of the best ways to keep young people from dropping out of school and becoming criminals is to make sure they have a foundation for success in their earliest years. We are coming out in force to support high-quality early education and care for kids today so we can lower the devastating impact and cost of crime in the years to come.”

*Sheriff Leroy Baca,
Los Angeles County*

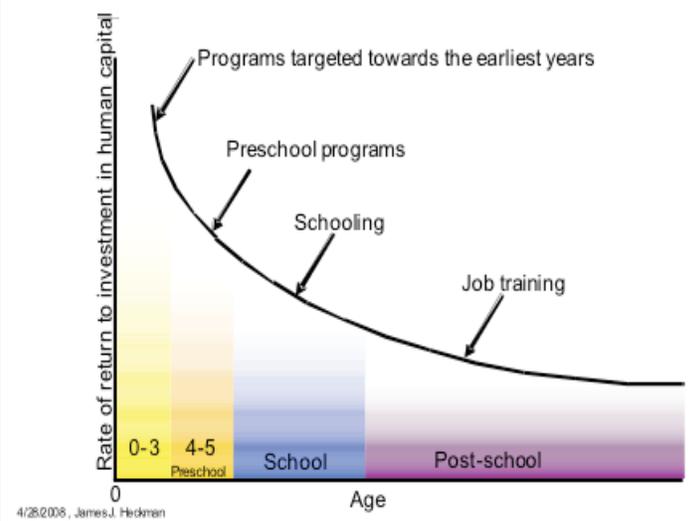
Why *Early* Education Matters

Like a house, the brain is built from the bottom up. It requires a solid foundation to support the more advanced development that occurs as children grow older. In babies' first months, the brain forms synapses at an incredible rate, going as high as 2 million new connections created every second. As babies grow and take in new sensory information, the synapses that are not being used are pruned away, allowing the brain to become more efficient at doing the tasks that are demanded of it.⁵

Healthy brain development in young children requires healthy interactions with the world around them. In a process known as "serve and return," babies engage those around them with sounds, gestures and facial expressions, and thrive on in-kind responses. Without nurturing attention and interaction, baby's brain may not develop the strong foundation it needs.⁶

Stress is normal for babies and is part of what helps brains produce and prune synapses, but too much stress can have negative effects on this process. If stress reaches and persists at toxic levels, the brain becomes wired to respond to danger and adversity at the expense of higher-order executive functions like decision-making, working memory, behavioral self-regulation and mood and impulse control.⁷

Rates of Return to Human Capital Investment at Different Ages: Return to an Extra Dollar at Various Ages



[T]he capacity for developmental skills begins in the first five years of life. This is the beginning point for a person's creativity, communication, team working, problem solving, and critical thinking skills. .. [T]here is a great need for children to enter kindergarten prepared to learn. Unfortunately, too few young children today are in fact prepared with these tools. The U.S. Chamber of Commerce believes that to begin to address this issue of maximizing educational effectiveness, while remaining fiscally responsible, there must be far greater coordination among the existing patchwork of federal, state, local, and private early childhood programs. Through these efforts, states and localities should strive to provide access to high quality programs for all children.

*U.S. Chamber of Commerce
Policy Statement on Pre-K*

The ability of the brain to respond to experiences and to alter its architecture to meet life's demands is known as *plasticity*. The brain retains a certain amount of plasticity throughout life, but there are clear periods when brain structure is more likely to be affected by interventions than others.⁸

The outer layer of the brain—the cerebral cortex—is the last to fully develop. As children progress into adolescence and prune the connections in the cortex, it thins. A thinner cortex is more developed. A 20-year study of participants who did not have excessive stress or trauma showed that cognitive stimulation around the age of 4 was associated with a thinner, more developed cortex in brain scans at age 19.⁹

These findings suggest that cognitive stimulation for children under 5 years of age who come from homes that are not particularly stressful still change brain architecture in ways that improve higher-order functions. Early education may have the most bang for the buck when it is offered to children who are more at-risk for poorer outcomes, but it is a good investment in all children.

Short-Term Academic Gains

At the beginning of each new school year, kindergarten teachers are faced with classes full of children with very different backgrounds and levels of preparation for school. Pre-K has been repeatedly shown to prepare children academically for kindergarten, helping our youngest students from all backgrounds start with the basic academic skills they need to succeed.

Several studies have shown that, as children progress through elementary school, the academic skills of those who attended pre-K and those who did not begin to converge. This is not really surprising, as classrooms advance together.

If there are children in the classroom who need to catch up, then everyone else must wait while they do so. Children who come in with a pre-K advantage may not be effectively challenged in a class where several children did not have that advantage, and their further advancement may be slowed because of it.

In a school full of children who come from families with parents who earned college degrees and work in professional jobs, the difference between those who attended pre-K and those who did not may be small, and those without pre-K likely do not require much catch-up time. For

our most at-risk children, these effects are more noticeable.

Short-term academic gains have value, and pre-K cannot be blamed for our school systems' inability to build on those gains. When one looks at academic "fadeout," it makes more sense to ask what needs to be done in elementary and middle schools to sustain pre-K gains than to question the value of what were real and measurable increases in children's academic skills.

And, as economist and Nobel Laureate James Heckman points out, the academic gains are the least of what pre-K achieves:

The cognitive skills prized by the American educational establishment and measured by achievement tests are only part of what is required for success in life. Character skills are equally important determinants of wages, education, health and many other significant aspects of flourishing lives. Self-control, openness, the ability to engage with others, to plan and to persist — these are the attributes that get people in the door and on the job, and lead to productive lives.¹⁰

¹ Barnett, W. Steven. 2013. *Getting the facts right on pre-k and the president's pre-k proposal*. New Brunswick, NJ: National Institute for Early Education Research (NIEER). <http://www.nieer.org/sites/nieer/files/Getting%20the%20Facts%20Right%20on%20Pre-K.pdf>

² Christeson, William, et al. 2013. *A commitment to prekindergarten is a commitment to national security*. Washington, DC: Mission: Readiness. http://missionreadiness.s3.amazonaws.com/National_prek_report.pdf

³ Ibid.

⁴ Christeson, William, et al. 2013. *I'm the guy you pay later*. New York, NY: Fight Crime: Invest in Kids. http://cdn.fightcrime.org/wp-content/uploads/1%27m_The_Guy_Report.pdf

⁵ Hawley, Theresa and Megan Gunner. 2000. *Starting smart: How early experiences affect brain development*. Washington, DC: Zero to Three. http://www.ounceofprevention.org/news/pdfs/starting_smart.pdf

⁶ Center on the Developing Child. 2007. *The science of early childhood development* (InBrief). Cambridge, MA. <http://www.developingchild.harvard.edu>

⁷ Shonkoff, Jack, Andrew Garner, et al. 2012. "The lifelong effects of early childhood adversity and toxic stress." *Pediatrics*, 129, 1. <http://pediatrics.aappublications.org/content/129/1/e232.full>

⁸ National Scientific Council on the Developing Child. 2007. *The Timing and Quality of Early Experiences Combine to Shape Brain Architecture*. Cambridge, MA. <http://developingchild.net/pubs/wp-abstracts/wp5.html>

⁹ Avants, B., et al. 2012. *Childhood stimulation key to brain development*. Presented at the annual meeting of the Society for Neuroscience in New Orleans, LA. <http://www.abstractsonline.com/Plan/ViewAbstract.aspx?sKey=734b1ccd-cfcf-4394-a945-083ca58f8033&cKey=7b3e8587-f590-4d94-ae3f-e050d52e8488&mKey=%7b70007181-01C9-4DE9-A0A2-EEBFA14CD9F1%7d>

¹⁰ Heckman, James. 2013. "Lifelines for poor children," *The New York Times*, September 14, 2013. <http://opinionator.blogs.nytimes.com/2013/09/14/lifelines-for-poor-children/>



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