



Confronting the Fade-Out Debate: Children Flourish and Gains Do Last in High-Quality Pre-K Programs

SREB states have led the nation in providing access for children to their state-funded early childhood education programs for over a decade. In 2005, the majority of children attending state-funded prekindergarten (pre-K) programs in the nation were doing so in an SREB state. By 2013, 54 percent did so. **These pre-K programs in the SREB region lead the nation in access.** With Mississippi's launch of its program in 2014, all SREB states now serve 4-year-olds in state-funded pre-K programs. Six states nationwide still do not fund pre-K programs. (See Appendix on Page 16 for information on the access to public pre-K programs in SREB states.)

Despite these impressive gains in access to state-funded programs, some skeptics have urged policymakers not to expand pre-K. They cast doubt on its worth as an investment of more state dollars, because they fear a “fade-out” of gains. This fear is that the cognitive gains made during the pre-K year will fade away by the end of third grade — as the findings of a few studies have suggested. If SREB states are to continue expanding access to such programs for 4-year-olds and even younger children, policymakers need to know these programs can help children flourish throughout school. And, they need to know under what conditions the initial gains yield lasting benefits.

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Policymakers need to know these programs can help children flourish.

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This brief traces the evolution of research on state-funded pre-K programs. While a few older studies gave rise to and perpetuated a fade-out theory, recent research has produced evidence that children can sustain the gains made during the pre-K year. This brief begins with a historical re-

view of the research on pre-K programs — including a significant study that fueled the perception of fade-out. Next, it explores the new research that deepened practitioners' understanding of the elements of program quality that lead to better child outcomes such as higher achievement test scores. These newer research findings indicate that policy changes are needed in state-funded pre-K programs to ensure

that classrooms incorporate these evidence-based elements of high quality. Finally, this brief focuses on what the research tells policymakers on how to target state investments to ensure children who have the most to gain from early childhood investments have access to programs. For these children, starting school at age 5 is too late.

How Older Research Seeded the Fade-Out Debate

Short-Term Academic Gains

Most studies of pre-K programs find that program participants made statistically significant initial gains, compared to their nonparticipating peers.

Researchers examined decades of studies, covering hundreds of programs of varying quality that date back to the 1960s. Through meta-analyses, or studies of multiple studies, they calculated the average initial gains made by participants in all of these programs.

- Multiple meta-analyses — some dating back 25 years — documented by the National Institute on Early Education Research (NIEER) in 2011 found early childhood education programs, on average, produced positive initial outcomes for participants equal to moving a child from the 30th to the 50th percentile in test scores at school entry.
- In a 2013 meta-analysis covering studies of 84 preschool programs, researchers from the Center for Economic and Public Policy at the University of California, Irvine found that the initial academic effect of pre-K equated to about a third of a year of additional learning for program participants. They indicated that this effect size is equal to nearly half of the achievement gap associated with race found at kindergarten entry.

These studies on large-scale programs sometimes found that the academic gains from preschool attendance that were evident at school entry appeared to diminish as children moved through school. But, the evidence across all the research also showed that these initial academic gains did not disappear after

completion of the program as the term fade-out implies. In general, NIEER reported in 2011 that preschool participation led to academic achievement gains that leveled off during the early grades. However, these gains persisted at half the initial impact as children progressed through their schooling. (See Box A on Page 3 for more on fade-out.)

More importantly, research showed that the quality of the program made a significant difference. The initial gains children made in high-quality programs persisted

longer than gains made in lower-quality programs. Early high-quality, intensive, small-scale efforts, such as the well-known HighScope Perry Preschool Program of the 1960s and Abecedarian Project of the 1970s, showed longer sustained achievement outcomes than found in early large-scale, lower-quality programs. Children who attended these classic programs — and other high-quality programs — also demonstrated larger initial gains that resisted fade-out further into the later grades. For instance,

- A 2013 analysis conducted by University of California (Irvine and Los Angeles) researchers tracked children who attended preschool from the mid-1990s to the early 2000s. It found that children who attended higher-quality preschool programs entered school more prepared than children who attended lower-quality, center-based programs.

The initial gains children made in high-quality programs persisted longer than gains made in lower-quality programs.

- NIEER reported in 2011 that the long-term academic gains — as measured 10 or more years after program completion — from participation in high-quality preschool programs, are equivalent to a third of the achievement gap between low-income children and their peers.

These small-scale programs were vital in informing researchers on best practices in program and teacher quality.

Although most of the studies of high-quality programs are compelling, some skeptics have focused on a few studies — rather than the entire body of research — to conclude that large-scale, early childhood education programs are ineffective.

In particular, skeptics often cite the 2010 National Head Start Impact Study (NHSIS) as evidence against pre-K expansion. This study of a 2002 cohort of 3- and 4-year-olds found that most of the cognitive gains the Head Start participants made were lost by the end of

Box A

Understanding Key Terms in the Fade-Out Debate

Early childhood education has strong advocates for increased investment and a share of vocal skeptics. Their debates over pre-K generally focus on the benefits of the program in relation to its cost, or return on investment. The skeptics are concerned with the apparent **fade-out** of the academic benefits of pre-K in the years following participation. They particularly fear the loss of advantage these children gained in reading and math, compared with those who did not attend pre-K. They point to research studies that seem to show the advantage disappears by the end of third grade, concluding that pre-K investments are not worthwhile.

But, researchers stress that the loss is more like *fading* than *fade-out*. They have documented a complex interplay of circumstances that leads to a decrease in the advantage. Some of these circumstances that the researchers documented include:

- low-performing early grade programs in K-12 public schools that are unable to sustain the gains children made in higher quality pre-K programs as the children progress through school;
- early grades teachers who dedicate more time to children who did not attend pre-K programs in an attempt to catch them up;
- misalignment of curricula and standards between pre-K and K-3;
- effective kindergarten and early grades interventions in some settings that are able to catch up the lower-performing nonparticipants to their peers who attended pre-K;
- a spillover effect in the early grades between participants and nonparticipants, as children who attended pre-K help their peers catch up.

Depending on how researchers have understood these factors to influence children after pre-K, some believe a more accurate term for the lessening of outcomes over time is **convergence**, suggesting that the achievement results of participants and nonparticipants grow together during the early grades. Others call it “**catch-up**.” They focus on how nonparticipants are able to gain more ground in kindergarten and the early grades. In this view, pre-K does provide benefits to participants. But nonparticipants have a chance to gain the same benefits, while pre-K students stagnate in their learning during the crucial early grades. Even so, in most studies, where the difference in outcomes between participants and nonparticipants fades somewhat as researchers follow the children into their schooling, pre-K participants continue to outperform their peers who did not attend such programs.

first grade. This study, however, had design flaws that compromised its results. First, the majority of children in the nonparticipant control group attended other preschool programs — and some even attended Head Start at other program sites during the study. Second, some children in the subject group did not finish the entire Head Start school year. The significant blurring of the groups made the conclusion about participation invalid.

It is problematic to draw conclusions from one study and apply them to all pre-K programs. Meta-analyses that average results across the literature provide better estimates of a program's overall impact. Also, researchers and analysts should not generalize conclusions of a single study beyond its scope. This principle is especially important in the case of this and other early Head Start studies. Head Start was created as an economic development program. It, therefore, was more parent-focused in providing low-cost child care than child-focused in providing quality early education. Subsequent studies of Head Start demonstrate an increase in initial academic outcomes for program participants after the program implemented quality-driven policy changes in 2007, such as increased teacher qualifications and changed curricula, including a greater focus on early reading skills.

Pre-K Nurtures Children in Nonacademic Ways

The fade-out argument focuses primarily on achievement gains. **Yet, child development experts agree that human growth is a much more holistic process — one that includes physical, emotional, social and behavioral development — as well as cognitive growth.** The National Association for the Education of Young Children (NAEYC) affirms that in order for children to be adequately prepared for school, early childhood programs must address all of these domains. Each one is fundamental to the long-term success of children. Achievement test score gains in the early grades alone will not ensure that a child is ready for school and life.

In 2013, a team of researchers from the Society for Research in Child Development and the Foundation for Child Development reviewed decades of research on early childhood education programs to determine

what benefits — in addition to achievement gains — preschool might contribute to children's success in life. They found long-term positive outcomes from preschool programs on high school grad-

uation rates, additional years of education completed and lifetime earnings, as well as lower crime and teen birth rates.

A 2010 meta-analysis from Rutgers University found additional long-term benefits for children who attended preschool programs, including higher grade-point averages, fewer instances of special education placement and lower rates of grade retention. It also found benefits from preschool participation on key social and behavioral measures such as self-esteem, school adjustment, aggression and anti-social behavior.

Research even documented that Head Start in its early years, before its shift to education programming around 2007, provided significant long-term benefits to program participants. Head Start positively impacted program participants' health, likelihood of graduating from high school and college attendance rates. It also reduced the chances of participants repeating a grade in school and being placed in special education.

Long-Term Gains = Return on Investment

While Head Start was developed as an economic development initiative, state-funded pre-K programs were created to prepare children for school. States should be looking to longitudinal studies of large-scale, state-funded pre-K programs for evidence of benefits and financial returns to the state from their early childhood investments. In fact, state-funded programs demonstrate larger positive short- and long-term impacts than federally funded Head Start across the research. A 2014 meta-analysis from the Washington State Institute for Public Policy compared results from 49 rigorous studies of state-funded

Researchers found long-term positive outcomes from preschool programs on high school graduation rates, additional years of education completed and lifetime earnings, as well as lower crime and teen birth rates.

pre-K, university-run preschool, and Head Start programs to see how these programs impacted low-income 3- and 4-year-olds on a variety of measures. The researchers found that the state-funded programs outperformed Head Start programs on key child outcome measures, including test scores at school entry and high school graduation rates. They also found less grade-level retention and instances of criminal behavior in the state-funded programs than in studies of the Head Start program.

While the fade-out theory narrowly focuses on cognitive development and academic achievement gains, it is the long-term, nonacademic outcomes that equate into large financial returns for states. University of Chicago economist, James Heckman, determined that investments made earlier in an individual's life equate in larger returns than investments made later. Investments in lower student-teacher ratios in K-12, publically funded job-training programs, adult literacy programs and subsidized tuition after high school lead to lower returns than investments in early childhood programs.

In particular, by investing in high-quality pre-K programs, state K-12 school systems can reap large savings from two programs: remediation for students who have failed a grade and special education. SREB states are particularly vulnerable to remediation costs due to high rates of grade-level retention. Fourteen SREB states, in 2012, had higher percentages of school-age children who repeated one or more grades since starting kindergarten than the national average, at 9 percent. In fact, the grade-level retention rates in two SREB states were at least twice the national average. (See Figure 1.)

Likewise, special education costs affect SREB states. A 2015 study from Duke University reported that special education classrooms, with lower student-staff ratios and more specialized services, cost twice as much per student annually as traditional classrooms. In 2011, the median special education placement rate in the SREB region matched the national rate, at 13 percent. Six SREB states served higher percentages of public school students under the Individuals with Disabilities Act, Part B than the national average. (See Table 1 on Page 6.)

Figure 1

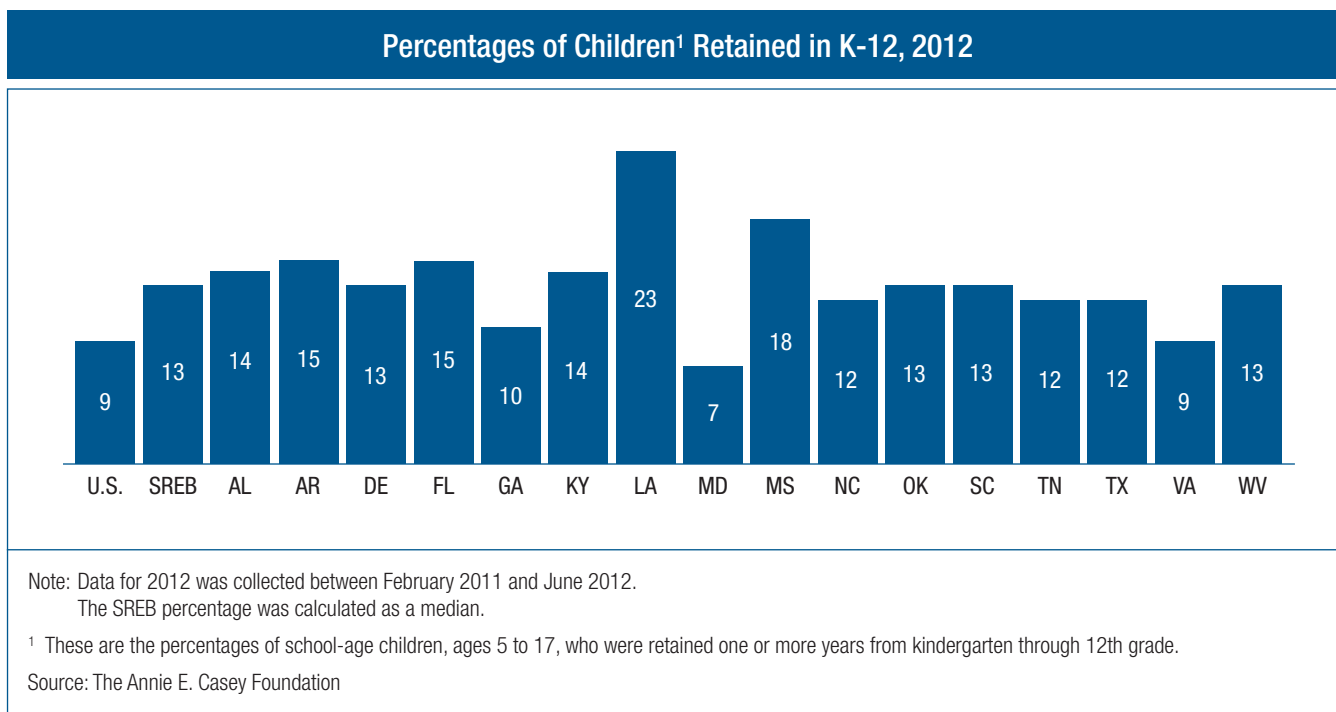


Table 1

Percentages of Public School Students Placed in Special Education, 2011-12

U.S.	SREB	AL	AR	DE	FL	GA	KY	LA	MD	MS	NC	OK	SC	TN	TX	VA	WV
13	13	11	13	15	14	11	15	12	12	13	13	15	14	13	9	13	16

Note: Special education placement means that the student was served under the Individuals with Disabilities Education Act, Part B; Percentages are based on the total enrollment in public school, prekindergarten through 12th grade. The SREB percentage was calculated as a median.

Source: National Center for Education Statistics, Digest of Education Statistics: 2013.

While high rates of special education placement drive up public education costs, high-quality, state-funded pre-K programs can help prevent some of these placements before school entry if children are

properly screened for developmental delays early and supported by highly qualified teachers through specialized services. (See Box B on Page 7 for a state example of cost reduction.)

Recent Research Yields New Hope

Brain Research: Early Years Matter

Learning does not begin at pre-K entry or even at school entry. Rather, the brain begins to develop before birth. The National Scientific Council on the Developing Child in conjunction with Harvard University researched the earliest years of human development, specifically the impact of early experiences on the human brain. In 2007, the council documented that the first years of life are when the brain is most capable of growing, and that ability decreases as an individual ages. They concluded that interventions during the first few years of life are more effective and efficient than those made later.

Recent scientific findings have illuminated the important role of adults in preventing early achievement gaps for young children, especially in language and literacy. The National Scientific Council of the Developing Child also reported that young children’s brains are physically shaped by the quality of their environments. In particular, the quality of the relationships and interactions between children and adults are critical in brain development. These factors are most predictive of long-term child outcomes.

Four Lessons on Growing Gains From Pre-K for the Long Term

First Lesson: Process Quality Over Structural Quality in Cultivating Long-Term Gains

The research has consistently shown that the quality of educational programs matters the most in sustaining early gains made in preschool. But, researchers’ understandings about what constitutes quality have evolved over time. When SREB last reported on pre-K in the 2007 report, *Ready to Start: Ensuring High-Quality Prekindergarten in SREB States*, it documented that SREB states were early leaders in implementing all 10 national standards of program quality issued by NIEER at Rutgers University. The first states to implement and maintain all 10 of these standards were SREB states — Alabama and North Carolina.

Since then, researchers have come to understand that some elements of pre-K program quality are more related to sustaining academic gains than other elements. The new brain science on the importance of the interactions between young children and

Box B

**Effects of Early Childhood Investments on
Third-Grade Special Education Placement in North Carolina**

In the 1990s, North Carolina introduced its Smart Start initiative to provide child care and family services from birth through age 5. In 2001, the state created the More at Four Prekindergarten Program, now called North Carolina Pre-K. In a 2015 study of both programs, Duke University researchers concluded that access to one or both of these programs lowered the probability of a child being placed in special education in third grade. They found that the annual state investment per child in More at Four reduced the likelihood of third-grade special education placement by 32 percent. A per-child investment in both More at Four and Smart Start reduced the chance of special education placement by 39 percent.

adults in early child development has shaped new early education practice. Likewise, data from longitudinal studies of the small-scale classic programs like HighScope Perry Preschool Program and Abecedarian Project and other large-scale, publically funded programs informed practitioners on what elements of quality most achieve long-term child outcomes.

These and other more recent studies showed that the relationships and interactions between children and adults within a classroom — called process quality — have the biggest impact on long-term child outcomes. In order to achieve high levels of process quality, pre-K teachers should employ emotionally supportive, instructional strategies between teacher and child that are interactive and intentional. The interactions preferably should occur in small group settings that foster a child's direct engagement in developmentally appropriate activities. Research suggests that large group activities are not as conducive to the manner in which young children learn and develop.

Another key element of process quality is measurement and evaluation. The quality of child-teacher interactions should be measured through direct observation, and states need a system to provide constant feedback to early childhood teachers to ensure they improve the quality of their interactions continuously.

These new findings will necessitate a shift in state early childhood education policies. Traditionally, they have overly focused on structural elements of quality — such as child-teacher ratios, classroom size and

other such measures. These elements often carry a hefty price tag. But, they continue to be important, because they provide the necessary environment in which important interactional processes can take place. While low child-teacher ratios by themselves do not guarantee the pay-offs states need, they do provide opportunities for more relational interactions that children need to make progress. Structural elements also are often imbedded in state-program licensing requirements, because they also ensure the minimum safety and well-being requirements for young children.

New promising practices, such as statewide quality rating and improvement systems (QRISs), could accurately monitor and improve process quality in state-funded pre-K classrooms. An effective QRIS should include weighted measures of observed instructional quality and focus on all of the key domains of early childhood development in order to increase program quality systematically.

Lesson Two: Teachers Are Key to Growth in Pre-K Classrooms

Traditionally, teacher quality in pre-K programs has been measured by the level of formal education achieved by classroom teachers. A 2007 meta-analysis from Rutgers University and NIEER found a link between the educational attainment of pre-K teachers — both lead and assistant — and child outcomes, showing that teachers with bachelor's degrees have greater positive effects on classroom quality than teachers with less formalized education.

Pre-K teacher qualification policies in SREB states have changed little in the region since SREB last reported on pre-K programs, despite the evidence-base for raising them. By 2013, NIEER identified four of its standards as related to teacher quality — two of them on credentialing. In 2005, nine SREB states required lead teachers to earn a bachelor's degree. Ten SREB states did so in 2013, including Mississippi, which launched its state-funded program that year. From 2005 to 2013, one additional SREB state, Georgia, began meeting the other NIEER credentialing standard — requiring assistant teachers to have a Child Development Associate (CDA) degree or equivalent.

More recent research suggests that policies requiring bachelor's degrees for pre-K teachers without specifying fields of study may not be enough to guarantee that a teacher is highly qualified to work with 3- and 4-year-olds. Too few states offer teacher credentialing programs that are tailored to prepare early childhood education teachers to effectively engage in high-quality educational interactions with students. Instead, teachers are often certified in early childhood education if they have a bachelor's degree in general early education that is more geared toward older children.

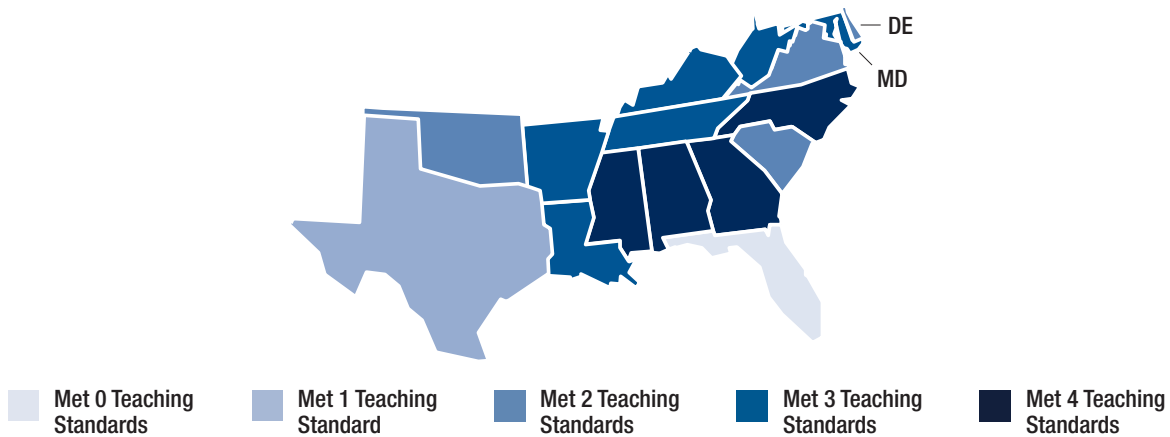
Researchers now know that teaching effectively to young children requires specialized, pre-service and in-service training, in-classroom coaching or mentoring, and ongoing professional development to keep pace with child development findings and best practices. Specialized teacher training is particularly important in reducing special education placements later in public schools. Teachers with specialized training in early childhood development — such as signs of developmental delay — and other early intervention procedures can help detect children who are not developmentally on track before they enter school. (See Figure 2 for more information on how SREB states measure up on teacher quality.)

Lesson Three: Content and Curriculum From Pre-K through Third Grade Needs Alignment

Studies have recently highlighted the importance of curricular and content alignment to program quality as children transition out of pre-K programs and into the early grades. Pre-K classrooms need to focus on developmentally appropriate activities for children — with an emphasis on play and small group settings. While the curricula should be implemented in a manner that is age-appropriate for 3- and 4-year-olds,

Figure 2

SREB States Meeting NIEER's Four Teaching Quality Standards, 2013-14



Note: For states with multiple state-funded pre-K programs, the teaching standards are reported for the program with the highest enrollment numbers. For Louisiana, the map reports the standards met by the Cecil J. Picard LA4 Early Childhood Program. For South Carolina, the map reports the standards met by South Carolina Half-Day Child Development Program (4K). Mississippi's state-funded program operated half of the 2013-14 school year.

Source: National Institute for Early Education Research (NIEER)

the content should build in complexity so it remains challenging. It is vital that young children start to build language, early literacy and early math skills before entering first grade. That challenging but developmentally appropriate content should be continued into the early grades in order to sustain the gains made before school entry.

In 2014, researchers from the University of Chicago and Vanderbilt University found that the curricula in many K-12 public schools were not aligned to early learning standards. Early grades teachers too often had no new content for their students who had completed pre-K, leaving these children to repeat material that they already mastered. The researchers found that kindergarten teachers spent more days a month on basic, repetitive content than on advanced reading and math material. The study also indicated that children who had attended preschool fall behind their peers in math skills on readiness assessments in kindergarten classrooms that offer more days of basic, repetitive math content. In reading, these children showed no gains in kindergarten programs that offered more instruction in basic reading content.

Both pre-K participants and nonparticipants benefited from additional exposure to advanced content during kindergarten. Researchers have noted that repetition of material and misalignment of content between pre-K and kindergarten classrooms play a role in the apparent fading of results from kindergarten through the early grades for pre-K participants.

What appeared as a fading of gains for pre-K participants was actually a steeper learning curve for the nonparticipants and a lack of challenge for the children who attended preschool in previous years.

Clearly, it is not enough to have high-quality pre-K programs, if that quality is not continued into the early grades. The transition from pre-K to elementary school is a pivotal point; however, it is often overlooked in state K-12 policy. The University of Chicago and Vanderbilt researchers suggest policy changes such as altering kindergarten content to include more days of challenging material as a low-cost way for policymakers to extend the academic gains made during the pre-K year. Another way is to align learning standards from pre-K through high school graduation to smooth students' transitions between grades,

provide for the necessary overlaps and eliminate unnecessary content repetition. By 2012, all SREB states with state-funded pre-K programs had developed comprehensive early learning standards and aligned those standards with K-12 state standards. SREB policymakers can now address whether these standards promote challenging, developmentally appropriate curricula for all children.

Lesson Four: High-Quality State-Funded Programs Sustain Gains

Research is emerging with good news about high-quality pre-K programs. Several studies of state-funded programs that have implemented all of the newly recognized elements of program quality show that participants sustain academic gains further into K-12. These programs have all worked to support highly trained teachers with on-going opportunities for growth — through a system for classroom observation, measurement and feedback; high-quality, well aligned and developmentally appropriate curricula; and early learning standards that are aligned with the early grades.

A 2013 report from researchers at the University of Virginia and Ready on Day One indicates publically funded pre-K programs in four states that are effectively resisting fade-out through such high-quality programming. And, the researchers demonstrated that all four of these programs obtained this higher level of quality at or near the same funding levels as other state-funded pre-K programs. Each time these programs are studied, they consistently find gains for their participants when compared to their peers who did not attend the program. By resisting the significant fading found in older studies, these programs demonstrate that large-scale early childhood investments can be lasting for children and beneficial to the state. These four include:

- New Jersey's Abbott Preschool Program;
- Boston Pre-K;
- Maryland's Extended Elementary Education Program (EEEP), now Maryland Pre-K, in conjunction with the state's comprehensive early childhood centers known as Judy Centers;
- and, North Carolina's More at Four Prekindergarten Program, now NC Pre-K.

Where Will State Resources Produce the Greatest Return?

Not All Children Enter School Ready to Learn

The evidence is clear: not all children enter school ready to thrive. Recent brain research indicates that achievement gaps among various groups start many years before current education interventions begin. The findings should help policymakers wishing to make the most of state early childhood investments set priorities. If they target access to early childhood programs to the student groups most in need of these services, they are most likely to get the greatest return on their investment. Two groups of children that constitute a large and growing population in the SREB region are particularly at risk of not being ready for school and would benefit from the investment.

Children Living in Poverty and in Low-Income Households

A 2013 study from Stanford University found that substantial achievement gaps between children from families of different income levels begin to form by age 18 months. By age 2, a 6-month achievement gap in language development has already developed between children from the lowest and highest income households. And, the gap will continue to grow as the children grow. By the time these children reach school age, educational programs have little chance of closing this gap.

A 2012 study from the Center on Children and Families at Brookings confirmed that children living in poverty enter school at a disadvantage to their more affluent peers. The data showed that 48 percent of children living in poverty demonstrated school readiness at age 5, compared with 75 percent of their higher-income peers.

For many young children, early cognitive gains are crucial in preventing large achievement gaps that otherwise would be present throughout the early grades. These gaps in academic preparation continue throughout school. Scientists have known that early vocabulary and language development are paramount to reading proficiency by third grade and later success in school. In 2013, the regional achievement gap between low-income fourth-graders and their peers on the National Assessment

of Educational Progress (NAEP) reading at the Proficient level was 29 percentage points. This achievement gap grew from 2009 to 2013 in 15 of the 16 SREB states, signaling that states in the region are falling further behind in preparing children for school success. (See Table 2 on Page 11.)

Reading proficiency, in particular, is predictive of life-long achievement. A 2012 report from The Annie E. Casey Foundation found that 16 percent of children who lack reading proficiency by the end of third grade will not graduate from high school on time. This is four times the rate for children who read proficiently. Children living in poverty and struggling to read by the end of third grade demonstrate even greater gaps in graduation rates. Policymakers aiming to increase long-term outcomes through reading proficiency initiatives need to look years before the nationally recognized benchmark of third grade.

Current research is also clear that children living in low-income families gain more from high-quality early educational interventions, including pre-K, compared to their higher-income peers.

As addressed in a 2013 report from the Society for Research in Child Development and the Foundation for Child Development, state-funded pre-K programs with universal eligibility allow for analyses of children from various income families. (These programs admit all age-eligible children regardless of family income so long as seats are available.) Studies of children in these programs can compare the gains made by participants in one pre-K program across household income levels. Numerous studies of two universal programs — Georgia Pre-K and Oklahoma Early Childhood Four-Year-Old Program — found larger positive, academic gains in early math, reading and language skills for children from low-income families than for their peers from higher-income families.

Findings like this one are particularly important for the SREB region. Fourteen SREB states had higher percentages of school-age children living in low-income households than the national average in the 2012-13 school year. In four of these states, more than 60 percent of public school students were eligible for free- or reduced-price lunch. Even more dire, 13 SREB

Table 2

NAEP Fourth-Grade Reading Results							
<i>Percentages Scoring at or Above Proficient by Income Level, 2009 to 2013</i>							
	Percentages of Low-Income Fourth-Graders Scoring At or Above Proficient		Percentages of All Other Peers Scoring At or Above Proficient		Achievement Gaps Between Low-Income and All Others		Change in Gap ¹
	2009	2013	2009	2013	2009	2013	
U.S.	17	20	45	51	28	31	3
SREB Median	18	21	43	50	26	29	3
Alabama	16	18	43	49	27	31	4
Arkansas	20	22	42	46	22	24	2
Delaware	21	25	45	52	24	27	3
Florida	25	27	49	58	24	31	7
Georgia	18	21	44	53	26	32	6
Kentucky	24	23	49	51	25	28	3
Louisiana	13	15	32	42	19	27	8
Maryland	18	24	49	58	31	34	3
Mississippi	14	15	38	42	24	27	3
North Carolina	17	22	46	53	29	31	2
Oklahoma	18	21	39	43	21	22	1
South Carolina	15	17	43	46	28	29	1
Tennessee	17	18	39	52	22	34	12
Texas	17	17	43	47	26	30	4
Virginia	18	21	49	56	31	35	4
West Virginia	17	24	37	37	20	13	-7

¹ A positive value for the change in gap means the achievement gap is widening, while a negative value indicates that the gap is closing between low-income students and their peers.

Source: National Center for Education Statistics

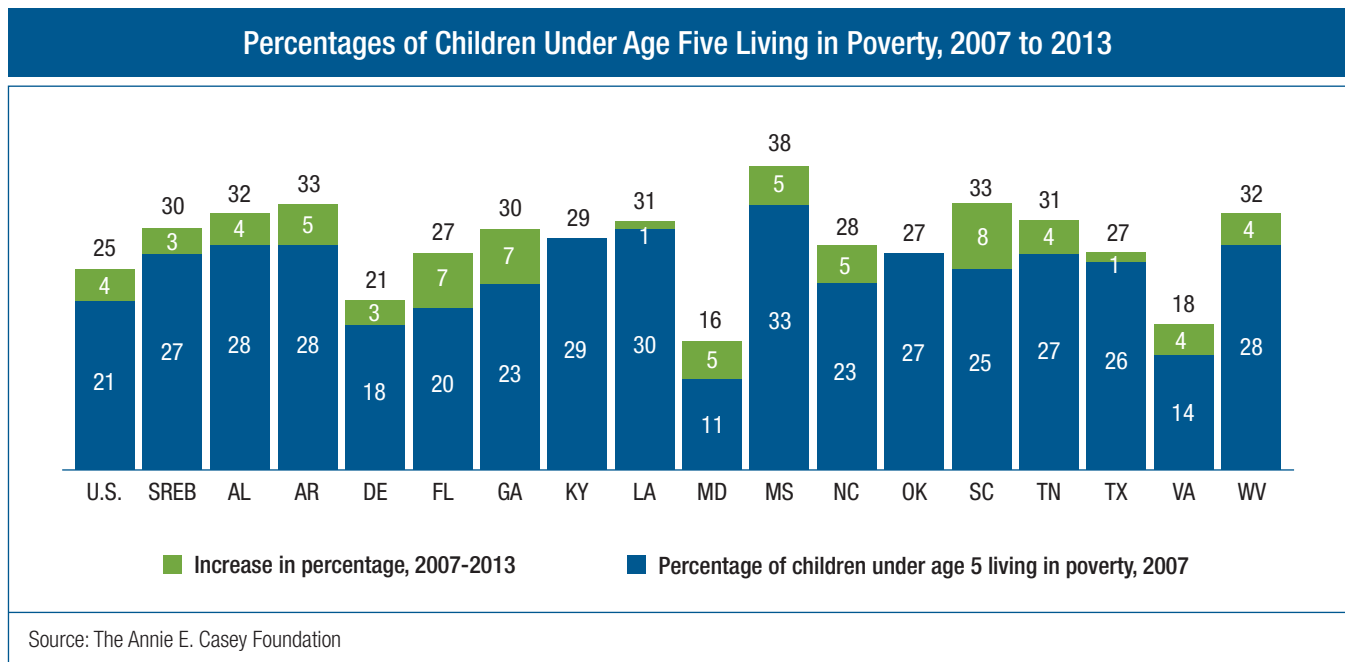
states had higher percentages of children under age 5 living in poverty than the national average at about that time. Nearly one in three young children in the region lived in poverty that year. And the trend is increasing: from 2007 to 2013, the percentages of children under age 5 living in poverty rose in 14 of the 16 SREB states. (See Figure 3 on Page 12.)

Poverty rates are higher in states across the nation for families with young children than for those with older children, typically because parents in the first group are younger themselves and earlier in their

careers. Education investments during these early years benefit the entire family — through access to much-needed child care, opportunities for parent engagement with schools and teachers, and parent education and services. These investments in entire families can reap large financial returns for states beyond child-centered outcomes, including a more productive work force and vital economy.

Access to higher-quality preschool programs in the region, regrettably does not match the need exemplified in the research. In 2015, the Education Week

Figure 3



Research Center reported large gaps in the percentages of poor and nonpoor 3- and 4-year-olds who enrolled in center-based preschool programs in 2013. **In the nation, 3- and 4-year-olds living above the poverty line attended preschool at rates 16 percentage points higher than those living in poverty.** Six SREB states had enrollment gaps larger than in the nation in 2013. (See Table 3 on Page 13.) Rather than attending these higher-quality center-based programs, research shows that children from the lowest-income households attend child care centers that are overwhelming low-quality and unlicensed — and often unsafe — at higher rates than their higher-income peers.

Even in states where the state-funded pre-K program limits eligibility to children whose family household income falls below an established threshold and provides ample seats for the state's low-income population, additional barriers prevent many lower-income families from enrolling their children. Oftentimes, publically funded program sites are not located near the areas of greatest need, such as in rural school districts. Furthermore, families may not have transportation to pre-K. And, few state-funded pre-K programs are full day, which limits who can attend.

Low-income families often do not have the work flexibility or family support to allow their children to attend half-day programs. All of these issues should be considered when states expand access and designate program sites.

Dual-Language Learners

Children facing economic distress are not the only ones who benefit from pre-K investments. Researchers have documented that dual-language learners (DLLs) also benefit greatly from early education opportunities. DLL children in the United States — who live in households where at least one member speaks a language other than English — often need exposure to the English language before school entry through language and early literacy pre-K content. (See Box C for more information on DLLs.)

- According to a 2012 study of the **Texas Public School Prekindergarten**, participants who qualified for the program based on limited English proficiency benefit substantially from the pre-K program. The study showed that former Texas pre-K participants who took the Spanish version of the third-grade Texas

Assessment of Academic Skills made significant gains in math over their Spanish-speaking peers who had not attended the state-funded pre-K program.

- In a 2008 study of children attending the **Oklahoma Early Childhood Four-Year-Old Program** in Tulsa, Hispanic children experienced large achievement gains in early reading, early math and language skills after attending the program. In particular, Hispanic children from homes in which Spanish is the primary language experienced larger gains from the program than their Hispanic peers who came from predominantly English-speaking homes.

According to the Annie E. Casey Foundation, the percentages of school-age children who speak a language other than English at home rose in 14 SREB states from 2007 to 2013. More than 10 percent of school-age children in half of SREB states live in households where a language other than English is spoken, making pre-K programming an important intervention for a significant proportion of young children in SREB states. (See Figure 4 on Page 14.)

Exposure to English before school entry can reduce the need for remediation and high-cost interventions for these students later in public school. The 2013 NAEP fourth-grade reading results for English-language learners (ELL) nationwide indicated these children lag behind their peers throughout the early

Table 3

Percentages of 3- and 4-Year-Olds Enrolled in Preschool by Income Level, 2013

	Percentage of All 3- and 4-Year-Olds Enrolled	Percentage Point Enrollment Gap ¹ Between Nonpoor and Poor 3- and 4-Year-Olds
U.S.	47	16
Alabama	43	18
Arkansas	48	13
Delaware	48	15
Florida	50	17
Georgia	49	19
Kentucky	43	16
Louisiana	51	12
Maryland	48	18
Mississippi	52	4
North Carolina	44	23
Oklahoma	41	7
South Carolina	44	15
Tennessee	40	16
Texas	42	15
Virginia	48	19
West Virginia	37	5

¹ A positive value for the percentage point enrollment gap means a larger percentage of nonpoor children attend preschool programs than their peers who live in poverty, while a negative value would indicate that a larger percentage of children living in poverty attend preschool programs.

Source: Education Week Research Center

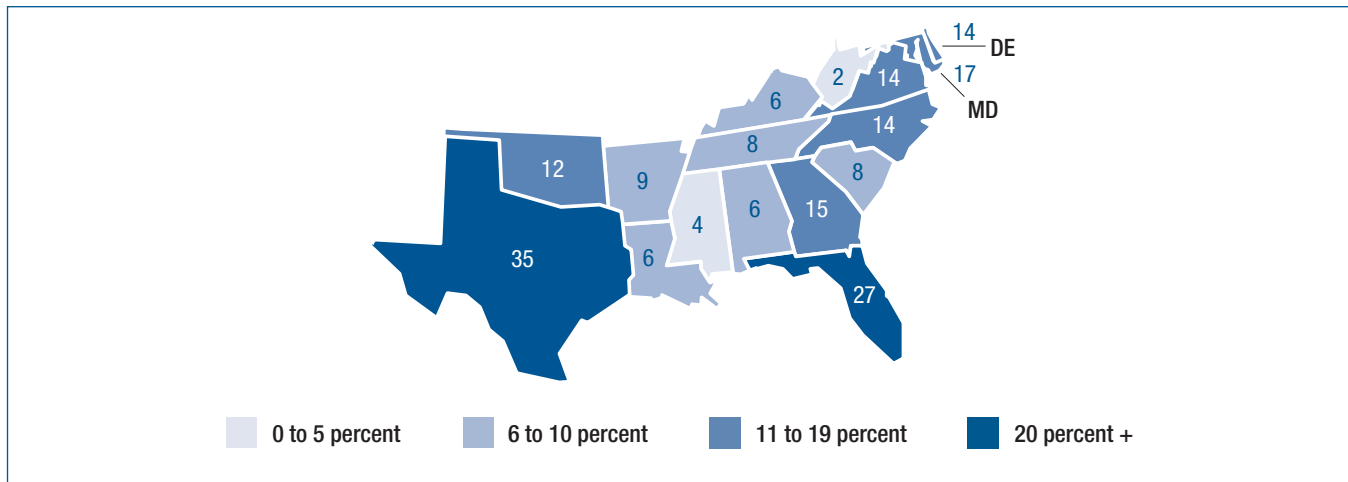
Box C

Early Childhood Education Advantages for Dual Language Learners

The term **dual-language learner** (DLL) has gained traction in early childhood circles in recent years. Early childhood experts use this term — rather than the K-12-associated English-Language Learner (ELL) term — for a child under age 5 who is learning its family’s native language while learning a different language than spoken at home. As Child Trends indicated in 2014, DLL status during early childhood can actually be an advantage. The developing brain of a young child is able to learn language with ease, especially during the first few years of life. Exposure to multiple languages before school entry can lead to higher levels of language mastery and cognitive growth. Early childhood education programs offer significant opportunity to help children from households where a language other than English is spoken to master two languages at the same time, while their brains are the most primed for such learning.

Figure 4

Percentages of School-Age¹ Children Who Speak a Language Other Than English at Home, 2013



Note: The U.S. average was 22 percent in 2013. The SREB median was 11.

¹ "School-age" means children ages 5 to 17.

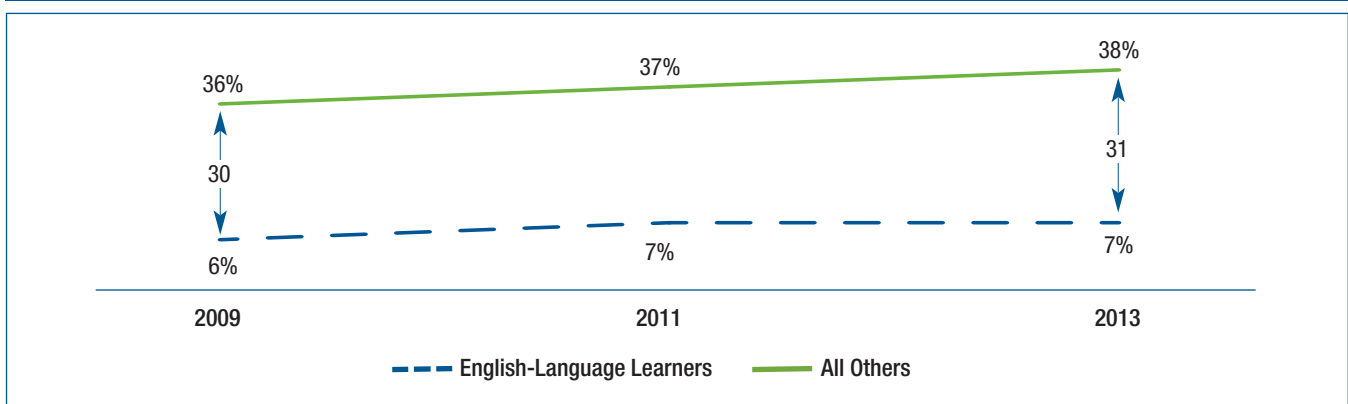
Source: The Annie. E. Casey Foundation

grades. Seven percent of ELL fourth-graders were proficient in reading on NAEP, compared with 38 percent of their peers. More troubling: the achievement gap between these two groups grew larger from 2009 to 2013. (See Figure 5.)

With a growing group of DLL children nationwide, these K-12 savings are worth the investment in high-quality pre-K programs. Not all pre-K programs, however, are able to prepare this group for success

Figure 5

NAEP Fourth-Grade Reading Results
Percentage Scoring at or Above Proficient by English Proficiency in the Nation, 2009 to 2013



Source: National Center for Education Statistics

in school. These children need services and instruction in both English and their home language to best narrow language achievement gaps, and teachers need to be able to provide appropriate specialized instruction. In 2014, only one SREB state — Texas — required its state-funded pre-K program to provide instruction and services to DLL children.

Policymakers concerned with fade-out can draw on these findings to leverage investments in at-risk children and high-quality pre-K programs to promote long-lasting achievement gains.

Conclusions

While a few studies point to a fade-out of gains for pre-K participants compared with their non-participating peers, the entire body of research, particularly new research, shows a different picture. In general, state-funded pre-K programs, even in their early years, showed academic gains at school entry for program participants. These are substantial gains worth saving. Early studies of pre-K programs found that much of the initial achievement gains from pre-K participation diminished as children moved through the early grades; these initial gains, however, did not completely fade out.

The fade-out argument narrowly focused on cognitive gains — such as achievement test scores. Yet, pre-K has delivered long-term benefits, including increased high school graduation rates, fewer placements in special education, lower grade-level retention rates, better health outcomes, higher educational achievement rates, higher lifetime earnings and lower crime rates. These nonacademic benefits reap large financial returns to a state that go a long way toward funding its expansion.

- **Build Quality:** Not all pre-K programs are created equal. Quality — especially teacher quality — is the most important element to determine if a child will reap long-term academic benefits from attending a pre-K program. However, the definition of “high-quality” has changed as new research on early brain development and longitudinal studies of

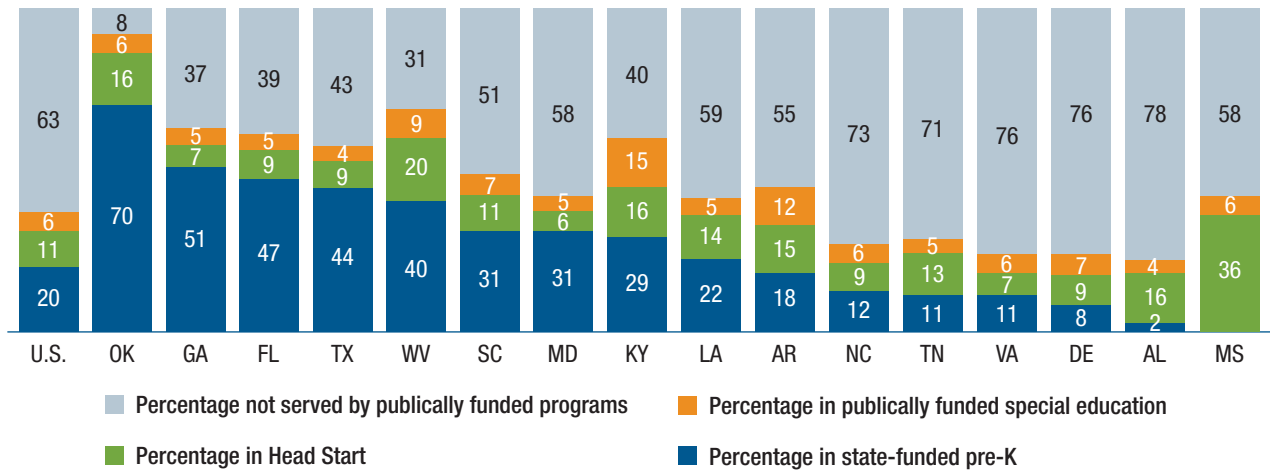
successful pre-K programs have illuminated the most important elements to achieve long-term outcomes.

- **Invest Early:** Early childhood education is one important way to increase the percentages of children who enter school ready to learn and to help prevent achievement gaps found later in the early grades. The academic boost at school entry provided by high-quality pre-K programs is a worthwhile investment for states; research shows that investments made earlier in life produce a larger return than those made later.
- **Target Investments:** Early investments in high-risk children — such as those from low-income families and dual-language learners — will result in the largest achievement gains. A state should consider the groups most at risk of not being ready for school when establishing state-funded pre-K program eligibility guidelines. Programs should be targeted and accessible first to these at-risk children and include the specialized services these children need most.

The best chance an SREB state has to ensure that all of its children have the opportunity to flourish in life is to provide them with high-quality early childhood programs led by highly qualified and fully trained teachers.

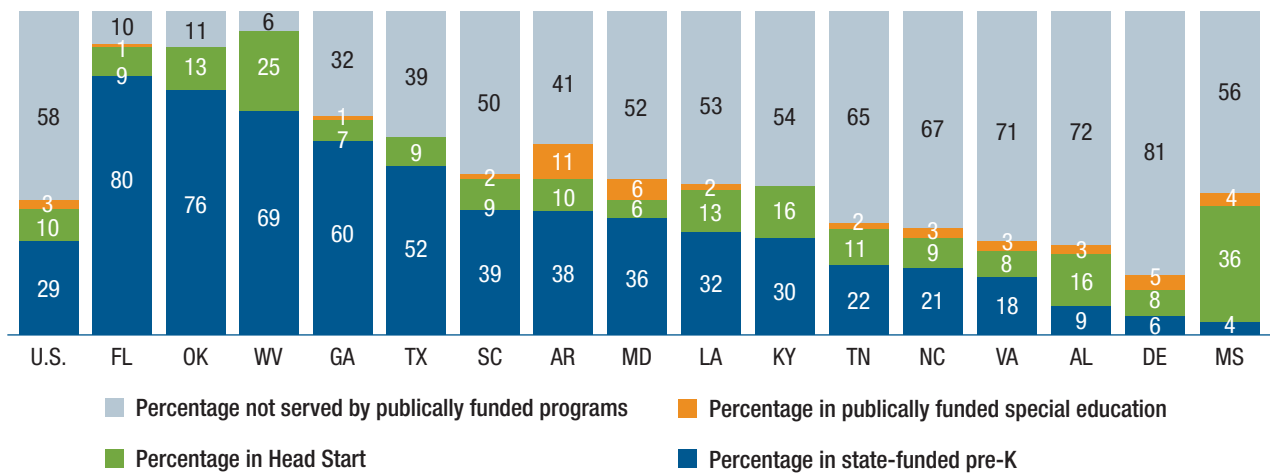
Appendix

Percentages of 4-Year-Olds Enrolled in Publicly Funded Prekindergarten Programs, 2005-06



Source: National Institute for Early Education Research (NIEER)

Percentages of 4-Year-Olds Enrolled in Publicly Funded Prekindergarten Programs, 2013-14



Note: The enrollment percentages for Mississippi are SREB calculations from NIEER data. Mississippi's state-funded program only operated half of the 2013-14 school year.

Source: National Institute for Early Education Research (NIEER)

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