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National and State Research on Pre-Kindergarten

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Summary Points

- Across the nation, over 1.3 million three- and four-year olds attend state-funded pre-K in 40 states and Washington D.C.
- Arkansas' state funded pre-K program, the **Arkansas Better Chance (ABC) program**, was established in **1991**.
- In 2003, the ABC program was expanded with the creation of the **ABC for School Success (ABCSS) program**. Both programs provide pre-K services to children that live in families with incomes less than 200% of the federal poverty level.
- Long-term studies of specialized programs reveal positive impacts on outcomes such as such as educational attainment, earnings, health, and crime rates; but all of these studies were on small, intensive programs.
- Recent studies on state funded pre-K programs in Oklahoma, New Jersey, and Arkansas found short-term positive effects in math and literacy in kindergarten; however, these effects dissipate over time.

This Brief

Across the nation, over 1.3 million three- and four-year olds attend state funded pre-K programs in 40 states (and Washington D.C.).[1] In Arkansas, over 25,000 three- and four-year olds are enrolled in state-funded programs. Since 2008, approximately $111 million a year of state funding has been spent on pre-Kindergarten in Arkansas.[2] In the 2014 election season, the topic of pre-K and state funding for pre-K has been debated in a number of state races, including Arkansas. Therefore, the purpose of this policy brief is to describe pre-K in Arkansas and summarize the existing research examining the impact of pre-K.

Pre-K in Arkansas

Arkansas currently provides pre-Kindergarten funding and full-day services for eligible at-risk children through the Arkansas Better Chance (ABC) program and the ABC for School Success program (ABCSS). State-funding for pre-K in Arkansas was first made available in 1991, with the establishment of the ABC Program. The program is housed under the Division of Child Care and Early Childhood Education (DCCECE), which was established in 1997 under the Arkansas Department of Human Services. Then, during the 2003 Special Session, the Arkansas General Assembly passed legislation to expand pre-K by allocating more funding towards pre-K in Arkansas and establishing the ABCSS program. The program aims to add pre-K classrooms in schools and centers located in low-performing districts. **Under the program, three- and four-year old students in families with gross income that does not exceed 200% of the federal poverty level are eligible for free pre-K.**

The ABC/ABCSS programs allow willing pre-K providers to apply for state funding, as long as they meet the ABC Standards and the State Quality Approval. Participating pre-K providers for the ABC program include center-based programs, Home-Visiting programs (HIPPY), and Family Child Care Homes. Center-based programs are the primary providers of pre-K services for the ABC program, and the most common providers are public school districts, non-profit and faith-based agencies, Head Start agencies (which are federally funded in part), and private child care providers. These agencies are selected to participate in the ABC program on the basis of program quality (based on meeting State Quality Approval) and ability to provide matching funds. Participating agencies are required to contribute 40% of the total cost, as 60% of the cost is funded by the state of Arkansas. For a center-based ABC provider, the total program cost for full-day care is $8,100 per child: the state provides $4,860 per child (60%), while the center is required to provide $3,240 per child (40%).[3] Those costs

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include breakfast, lunch, and a snack for students. Additionally, students receive other services, including vision, hearing, health, and development screenings and services. ABC and ABCSS programs can create a sliding fee scale for families who do not qualify for free pre-K. Priority enrollment goes to eligible students first; and then, a program can admit non-eligible students who pay for the services.

In 2011-12, there were a total of **275 ABC agencies**, including 133 school districts (48%), 13 educational cooperatives (5%), and 129 private providers (47%). In total, there were 1,250 pre-K classrooms at 560 program sites.[3]

With the establishment of the ABCSS program, pre-K enrollment numbers have dramatically increased across the state. Statewide pre-K enrollment in ABC/ABCSS programs grew from approximately 3,100 in 2003-04 to 13,600 in 2006-07 and **25,476 in 2011-12**. At the same time, total state funding for the ABC/ABCSS programs increased from $9.8 million in 2002 to $69.9 million in 2006. During the 2007 General Assembly, state pre-K funding was increased to $111 million, but state funding has not increased since that point in time (with the exception of 2009, when the ABC program received transfer funding).[4] Additionally, federal funds accounted for $71 million for Head Start programs in Arkansas in the 2013 Fiscal Year.[5] This federal funding is allocated to Head Start centers, which are a part of the ABC/ABCSS, and so these centers receive federal and state funding.

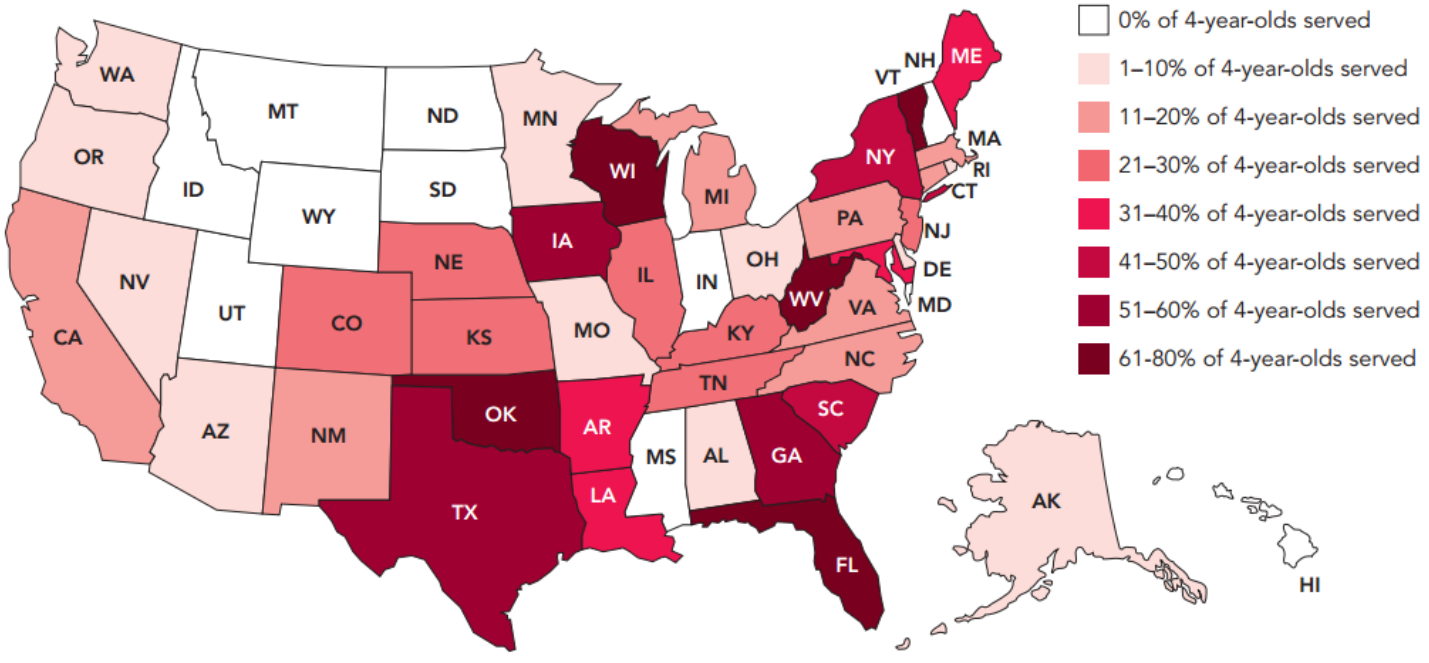
Table 1: State Funding for Pre-K in Arkansas, from 2000 to 2014

	State Pre-K Funding
2000	$9,900,000
2002	$9,820,000
2004	$12,366,500
2006	$69,966,500
2008	$111,000,000
2010	$111,000,000
2012	$111,000,000
2014	$111,000,000

The Pre-K Debate

According to the National Institute for Early Education Research (NIEER), across the nation in 2012-13, over 1.3 million three- and four- year olds attended state funded pre-K programs in 40 states (and Washington D.C.). In 2012-13, states spent over $5.3 billion on state pre-K programs.[6] Additionally, the federal government appropriated over $7.5 billion to Head Start in the 2013 Fiscal Year.[5] As higher percentages of three- and four- year olds are enrolling in pre-K programs across the nation, the issue of pre-K receives more attention. Debates around pre-K focus on funding, access (targeted vs. universal programs), the types of services provided, the effectiveness of programs, and the benefits of attending pre-K for at-risk students. In 2013, President Obama proposed an expansion of preschool to include every child. Currently, only a handful of states offer universal pre-K, including Georgia, Oklahoma, and Florida.

Figure 1: The Percentage of Four-Year-Old Students Enrolled in State-funded Pre-K in 2012-13[6]



Pre-K Research: What is the Evidence on the Effectiveness of Pre-K?

In order to decide whether it is worth it to make a substantial investment in pre-K, it is important to examine the effectiveness of pre-K and the impacts that pre-K has on students. Pre-K research examines short-term and long-term impacts of attending pre-K. The long-term studies examine outcomes, such as educational attainment, earnings, health, and crime rates. The short-term studies typically examine kindergarten readiness and achievement impacts through third grade. Research reveals varied impacts, particularly when comparing the short-term impacts to long-term impacts.

Long-term Studies of Pre-K

Research on the effectiveness of pre-K goes back to the 1960s and 1970s, when programs such as the Abecedarian and High/Scope Perry Preschool were cited as having very substantial short-term and long-term benefits for participants. The High/Scope Perry Preschool Study is commonly referred to by advocates of pre-K, not only because of its positive findings, but also because of the strengths of the study's research design. Using random assignment (*of 123 applicants for the program, the 58 students chosen by lottery were compared against the 65 who were not selected*), the Perry Preschool Study concluded that participation in the preschool program improved a child's readiness for school and led to long-term benefits, such as an increased likelihood of owning a home, having a job, and staying out of jail.[7] Another famous study, the Abecedarian Project, which also employed a random assignment design (with 111 total students), tells a similar story.[8] Participants in the program exhibited positive academic gains from kindergarten through adulthood.

Other long-term studies of pre-K programs include a study of a pre-K program in Chicago, Title I Chicago Child-Parent (CPC) Program.[9] In the quasi-experimental study, program participants were compared to other students, of whom only one-fourth attended pre-K. Long-term results of the program reveal higher high school graduation rates and lower rates of crime. Additionally, similar to the Perry Preschool Study and the Abecedarian project, the CPC study found economic returns for disadvantaged children attending pre-K.

The positive impacts seen by the Perry Preschool Study and the Abecedarian Project can be considered causal in nature, due to the use of random assignment. **However, it is important to note that the positive results of the Perry Preschool Study, the Abecedarian Project, and the CPC program are not very generalizable when discussing pre-K on a large scale, because all three programs were intensive in nature and served a small number of individuals, in contrast to many pre-K programs.** Many critics of pre-K expansion do not discredit the positive effects seen by these studies, but rather question how feasible it would be to establish high-quality, multiyear, pre-K programs at the national or state level.

Short-term Studies of Pre-K

Short-term studies of pre-K typically examine kindergarten readiness and impacts through third grade. There are many short-term studies of pre-K, and many of these examine larger programs (as opposed to the program-specific longer-term studies).

Making Sense of Research Design

The following research designs are utilized when examining the impact of education interventions, including pre-K. Random assignment is the most rigorous form of evaluation, followed by the other regression discontinuity and quasi-experimental.

- **Random Assignment**: Treatment and control groups are constructed so that each individual has the same probability that s/he will be placed in either group. Studies that utilize random assignment have strong internal validity, which allows researchers to make causal claims about treatment impacts.
- **Regression Discontinuity Design**: Individuals are assigned to treatment and control groups by a cut-off value (i.e. birthdate). Those who meet the cut-off eligibility are assigned to the treatment group. Those who were just shy of meeting the cut-off eligibility make up the comparison group.
- **Quasi-Experimental**: Studies that employ quasi-experimental design include simple pre-post, time-series, and matching studies. In pre-post design, one measure is taking for treatment and control groups before and after the intervention. Time-series design is similar to pre-post, yet multiple outcome measures are taken over the course of the intervention. In matching, the control group is constructed by identifying individuals who are similar to those in the treatment group on observable characteristics (i.e. race, gender, age, etc.)

The **National Head Start Impact Study**, an evaluation of the federally-funded pre-K program, is similar to the evaluations of Perry Preschool and the Abecedarian Project in that it uses the "gold-standard" random assignment research design. Children randomly assigned to attend Head Start were compared with children that did not attend the federally-funded pre-K program for a period of five years. The first results report was released in 2005; and in 2012, a report provided an update following the students through third grade. The study found initial impacts on developmental domains; however, for kindergarten through 3rd grade, there were no significant impacts found for math and language skills of program participants, when compared to children in the control group.[7] In other words, the National Head Start Impact Study found no positive effects for participation in the pre-K program by 3rd grade. However, it is important to consider that the control group (students not in Head Start) had access to enroll in other non-Head Start pre-K programs. Therefore, these results only represent the impact of the Head Start program and not the impact of attending pre-K.[10]

A number of other evaluations of pre-K examine statewide programs. The state of Tennessee expanded pre-K in 2005, and an initial evaluation of the **Tennessee Voluntary Pre-K (TN-VPK) Program** showed positive results after one year for children who attended the pre-K program. Because a state lottery determined who was admitted to the program, the study of the TN-VPK was able to use random assignment.[11] However, a follow-up study of the program concluded that any initial impact of the program had faded for children by the end of kindergarten.

Evaluations of two other state programs, the **Abbot Program in New Jersey** and the **Oklahoma Pre-K Program**, employed regression discontinuity designs (RDD) to determine the impact of attending the pre-K programs. In this design, the impact of the program is assessed by comparing the development of children who were just eligible to enroll (those born before, yet near the cut-off) to those that were ineligible to enroll (just missed the cut-off). Positive impacts in math, print awareness, and receptive vocabulary were found for participants in New Jersey's Abbot Program.[12] As for Oklahoma's pre-K program, the program evaluation concluded that participation had significant positive impacts for the cognitive development of children, with the most benefits going to Hispanic and African American participants.[13] Both studies are important to consider, as the programs were administered at the state-level. However, RDD is limited in that it allows a comparison to be made for only one year, because after one year, the ineligible children become eligible for the program and are likely to enroll. Therefore, the positive results seen in New Jersey and Oklahoma can only be generalized for the short term.

Research on Pre-K in Arkansas

As pre-K programs vary across the nation, it is important to examine pre-K research in Arkansas. In 2007, the National Institute for Early Education Research (NIEER) conducted an evaluation of Arkansas' ABC program. Using regression discontinuity design, the NIEER report examined the cognitive development of four-year-old children who participated in the ABC program. The conclusion was positive, with ABC participants demonstrating academic growth in vocabulary, math, and early literacy skills when compared to children's growth without the program.[14]

In 2013, NIEER released the results of a longitudinal study of the Arkansas ABC program.[15] This study used quasi-experimental methods to evaluate the impacts of participation in the ABC program through third grade. Participants of the ABC program were compared with two groups of non-ABC participants: children that did not attend any pre-K program and children that participated in a pre-K program other than ABC. These two comparison groups were constructed on the basis of observable characteristics (such as family income, race, and gender) that were similar to the characteristics of the ABC program participants. The results indicate moderate cognitive gains for participants in the ABC program throughout 1st and 2nd grade in language, math, and literacy, particularly when compared to students who did not attend any pre-K program. Furthermore, ABC program participants were less likely to be retained in these grades. However, the results of this five-year follow up indicated a "fading-out" effect by third grade for ABC participants, as compared to both comparisons (ABC v. no pre-K and ABC v. other pre-K program), as there were only slight positive effects in literacy on ABC program participants. NIEER hypothesizes that the fading of the effects is due to the fact that students who did not attend pre-K may have received extra attention in early grades to catch up to those who attended pre-K.

In 2013, the Arkansas Research Center (ARC) released a study examining the impact of the ABC program on kindergarten readiness.[16] Using the Qualls Early Learning Inventory (QELI), which every student entering kindergarten must take, the study examined low-income students in ABC programs to low-income students with

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no known pre-K. The ARC found that a higher percentage of ABC program participants reached the "developed" status on the QELI, as compared to low-income students with no known pre-K. Though the study was less rigorous in design than the NIEER study, its findings were consistent with the NIEER findings. Both found that the ABC program had initial impacts on students in kindergarten, as compared to similar students not in the ABC program.

Conclusion

What does the research on pre-K programs, including Arkansas' own ABC program, mean for the future of pre-K in Arkansas? While the evaluations of pre-K programs in New Jersey, Oklahoma, Tennessee, and Arkansas provide support for the argument that pre-K does indeed matter for kindergarten readiness, in certain instances the positive impacts of a pre-K experience are limited. In Oklahoma, when the study disaggregated the program's impacts into racial subgroups, Hispanic and African American children were those who benefitted the most from the program, with white children having no statistically significant benefits from participation. As for Tennessee, although those who attended TN-VPK had statistically significant cognitive gains, these gains went away within one year. As for Arkansas, cognitive gains made by ABC/ABCSS program participants largely faded by third grade. However, longer-term research on smaller and intensive programs points to positive long-term outcomes for students who attend pre-K. Therefore, in debates, we often see policy-makers and politicians cherry picking positive or null results to prove the impact of pre-K. Consequently, we believe it is important to examine pre-K research as a whole, considering the short-term and long-term impacts. Over time, as pre-K expands and the funding of programs continues to be debated across the nation, we predict that more studies will examine the long-term impacts of pre-K. In doing so, we will continue to learn about the impact of attending pre-K.

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