



**RIDE** Rhode Island  
Department  
of Education

# INVESTING EARLY IN SCHOOL SUCCESS

PROVIDING HIGH QUALITY PRE-KINDERGARTEN  
FOR RHODE ISLAND'S 4 YEAR OLDS

A Rhode Island Department of Education Policy Brief  
December 2014

# INTRODUCTION

Research has consistently shown that at-risk 3- and 4-year-olds who attend a high-quality preschool are more successful in kindergarten and beyond – both academically and socially – than peers who did not attend high-quality preschool. In addition to positive social and academic outcomes, several longitudinal research studies have demonstrated that providing access to high-quality preschool is one of the most cost-effective investments government can make. From improved academic outcomes to the economic savings to schools and states, the benefits of high-quality Pre-K are irrefutable. In fact an analysis by economist Robert Lynch, from the Economic Policy Institute, predicts that:



“ A public investment in providing high-quality prekindergarten to all Rhode Island children ages 3 and 4 would start paying for itself by generating cost savings within 9 years. By the year 2050, the ratio of total benefits to total costs would be 8 to 1. ”

– Robert Lynch, Economic Policy Institute

Similarly, research on the economics of early childhood policy, based on a review of program evaluations, found that early childhood programs can generate government savings that more than repay their costs and produce returns to society that outpace most public and private investments (RAND, 2008)

In 2009, Rhode Island established a state-funded pre-Kindergarten (Pre-K) program. The pilot program initially included 126 four-year-old children and their families.

It is currently expanding and will include 1,062 children across the state by 2022. The program is designed to meet high-quality standards, build on the existing early childhood education infrastructure in the state (including child care, Head Start and public schools), and serve children 4 years of age who reside in communities with concentrations of low performing schools.

Simultaneous to the pilot launch, Rhode Island began working with the National Institute for Early Education Research (NIEER), a nationally respected early childhood education research organization, to conduct a landmark randomized control research study to evaluate the effects of Rhode Island’s Pre-K pilot program on participating children’s early learning outcomes. The results of this study are being used to inform Rhode Island state policies with the goal of improving children’s access to high quality early care and education.

This initial report shares the findings from the NIEER study and evaluation report of the 2009 – 2011 RI Pre-K Demonstration Project, describes the growth of the state pre-K program, and provides details regarding Rhode Island’s commitment to ongoing quality improvement within the state-funded Pre-K program.

# OVERVIEW OF NIEER STUDY

At the beginning of the 2009-2010 school year, Rhode Island, in partnership with NIEER, began studying impacts of the Rhode Island Pre-K Demonstration Project on children from all income levels. During that first year, 339 children were included in the study, about 40% (126) of whom were randomly selected to attend a Rhode Island state-funded Pre-K program. The remaining 60% were included in the control group. A second wave of 128 children was selected to attend a Pre-K program during the 2010-2011 school year. The study took place in seven classrooms across the state. Three classrooms were located in Providence, one in Central Falls, two in Warwick, and one in Woonsocket.

## The goals of the study were to:

1. **Assess the effects of enrollment in a high-quality Pre-K classroom on children's early learning outcomes.**
2. **Look at the effect of classroom quality on children's outcomes.**
3. **Determine if the effects of participation differed for low- and middle-income children.**
4. **Determine if the effects of classroom quality differed for low- and middle-income children.**
5. **Understand how pre-K classroom quality varied when different inputs were present (for example, technical assistance consultation).**

The demonstration was designed as a 2-year randomized control research study. Children enrolled in the Pre-K program formed the experimental, or Pre-K, group in the study and the control group of children came from the waiting list. The control group children applied to the Demonstration Project, but were not selected by a random lottery held by RIDE in September 2009.

The study used direct assessments to determine the impacts of the Demonstration Project on children's language, literacy, math, and social skills. Initial assessments were conducted as part of the enrollment process just prior to the school year. Follow-up assessments were conducted at the end of the school year (as close to kindergarten entry as possible). A full listing of the assessment tools used in this study can be found in Appendix B.

Because the children were randomly selected, those in the Pre-K and control groups should have differed only on whether they attended state Pre-K, and the research was designed to attribute gains made by children in the Pre-K group to their participation in the Demonstration Project. In addition, as the 50 children from middle-income families (above 185% of the federal poverty level) were equally represented in both groups, the study was able to speak to the impacts of Pre-K on middle-income children.

Since control group children may have enrolled in other preschool programs, the study was designed to collect information about the quality of the other programs as well. This was done by interviewing parents about their children's child care and preschool experiences and conducting interviews when possible, of teachers in alternative programs attended by control group children.

## Training and Technical Assistance

Over the course of the academic year, consultants were hired and trained to provide support to individual classroom teachers, in order to improve overall classroom quality. NIEER staff provided training to consultants and teachers, with a focus on classroom quality and improving instruction in math, science, and language supports. In addition to workshops, consultants met regularly with teachers and observed and reflected on classroom practice. After the spring 2011 assessments were completed, NIEER provided individual classroom reports details changes in teacher practices.

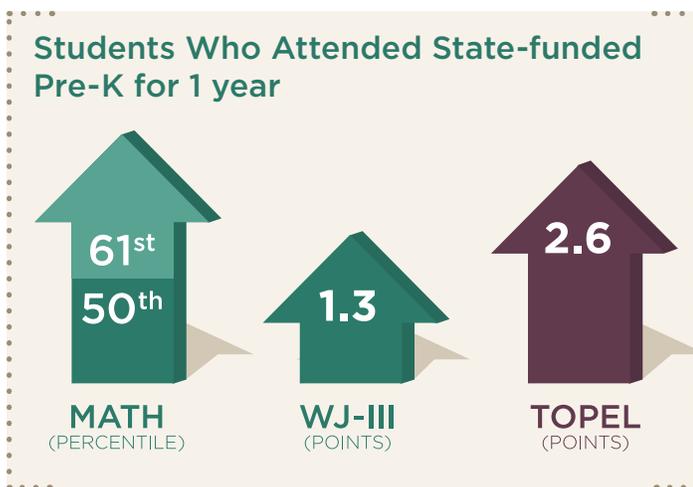
# OVERVIEW OF NIEER STUDY CONTINUED

## NIEER Study Results

NIEER researchers describe the results of the RI Pre-K Demonstration Project study as promising. Positive effects related to state Pre-K participation were found for children from families both below and above 185% of poverty. Three overall findings are explained below.

### 1 Positive Effects on All Children's Early Learning Outcomes

Children who participated in the state-funded Pre-K program for one year showed significant gains in print knowledge and early math skills compared to the children in the control group. Children who attended state Pre-K gained 1.3 points on the WJ-III, resulting in assessment scores in early math that increased from the 50th percentile to the 62nd percentile. Additionally children who attended state Pre-K gained 2.61 points on the TOPEL which measures print knowledge compared to those children who did not attend the program.



### 2 Stronger Effects and Family Income

Participation in the state Pre-K program had greater positive effects on children depending on their income levels. Specifically, the positive effects of state Pre-K program participation on children's receptive vocabulary was greater for children from families below 185% of poverty. These children had higher scores on average, up to a 3.72 point advantage on the receptive vocabulary test than children who did not attend the state Pre-K program. The magnitude of these effects suggests that the chil-

dren's assessment scores increased from the 50th percentile to the 65th percentile over the school year.

### 3 Training and Technical Assistance Is Critical to Program Quality

The average classroom quality of the demonstration classrooms increased over the course of the Demonstration Project due to the training and technical assistance, focused on classroom quality and improving instruction in math, science, and language supports, provided to the programs throughout the school year. Specifically, 5 of the 7 programs increased their average Early Childhood Environmental Rating Scale (ECERS) score during the first year of the study and 4 of 7 scored above a 5.0, the score considered an indication of a high-quality program. The average ECERS score rose from 4.72 in the fall of 2010 to 5.19 the following spring.

In addition, all programs demonstrated an increase in average PRISM scores from 2.89 in the fall of 2010 to 3.56 in the spring of 2011, with substantial increases in the quality of math and science materials provided, as well as instruction in math content. Interaction scores remained low, indicating additional professional development and supports are required, especially in the area of developmentally appropriate science instruction.



## OVERVIEW OF NIEER STUDY CONTINUED

Finally, all programs maintained or increased their CASEBA scores moving from 3.91 in the fall of 2010 to 4.06 in the spring of 2011, a measure that assesses the degree to which preschool teachers and classrooms are providing support for the social, cognitive, and linguistic development of English Language Learners. All programs also demonstrated high-quality English Language Supports.

### NIEER Study Recommendations

The results of the NIEER study are promising. Overall, initial data showed positive effects of state Pre-K attendance for all children. Dr. Barnett stated that the Rhode Island randomized trial offered a unique opportunity to provide policy makers and the public with strong evidence regarding the effects of quality preschool on children from middle- as well as low-income families and added

“ *...the pilot program was just getting started and effects are expected to strengthen as it matures, so the finding of positive impacts for all children right from the start is especially encouraging.* ”

– Dr. W. Steven Barnett, Director of the National Institute for Early Education Research



These results indicate that the Rhode Island state-funded Pre-K program is a good public investment. Children who attend the state-funded Pre-K have better outcomes than children who experience the status quo (i.e. a variety of typical child care settings). It also suggests that:

- Continued investments to expand access to state-funded Pre-K should yield greater gains.
- The diverse delivery system implemented in the RI State Pre-K Program model, which includes child care, Head Start and school district programs in the state Pre-K program, works well.

NIEER contends that long-term, increased achievement for children from low- and middle-income families will reduce educational inequality and social problems. Providing statewide, full-day kindergarten programs would likely further increase achievement and consolidate the gains from state-funded Pre-K. The researchers emphasized that the intensity and quality of the state pre-Kindergarten program were the keys to high returns, along with implementing policies to support a continuous improvement cycle that contributes to maintaining and strengthening the current state-funded Pre-K program results.

## NEXT STEPS

### Rhode Island's Next Steps

Rhode Island's legislative commitment to establishing a high-quality state pre-Kindergarten program, the Rhode Island Department of Education's leadership and collaborative community efforts, and NIEER's evaluation and recommendations provide a solid foundation from which we can expand and strengthen our existing state pre-K program. In a recently released report entitled *Expanding Access to Quality Pre-K is Sound Public Policy* (December, 2013), early childhood policy expert Dr. W. Steven Barnett highlights the growing national, state and local investment in state Pre-K. Given a scientific research base which provides solid evidence of improved child outcomes as well as potential long-term cost savings related to high-quality Pre-K, particularly for children whose parents have the lowest incomes and education (Barnett & Nores, 2013), policymakers across the country and in our largest cities are expanding Pre-K programs to reach more children. Dr. Barnett encourages policymakers to invest in high-quality Pre-K stating:

“ Remarkably, we project that in 2030 with no continuing federal support, every state except Idaho would spend less money on education from pre-K through grade 12 if they met the quality standards, operated for a full school day, and served all children under 200 percent of FPL. ”

- Dr. W. Steven Barnett

Within his report, Barnett offers Rhode Islanders specific research-based projections. If Rhode Island were to invest in its state Pre-K model, which reaches all ten quality standards identified by NIEER as essential, and offered Pre-K for all four-year-olds, independent of family income, the state would potentially save \$126,055,097 on Pre-K through grade 12 education by 2030.



Based on these current policy recommendations and the data gained from the RI Pre-K Demonstration Project, Rhode Island is committed to meeting the needs of young children and their families by continuing to expand access to high-quality Pre-K.

### Continuing to expand its high-quality Pre-Kindergarten program.

As stated in the 2013 NIEER Preschool Fact Book, Rhode Island is 1 of only 4 states who provide enough per-child funding to meet all 10 benchmarks for quality standards. However, Rhode Island currently ranks 41st or last in the country, providing access to Pre-K for 1% of four-year-olds in the state. Since 2009, Rhode Island has expanded its Pre-K program to 17 state-funded classrooms located in eight communities (Central Falls, Cranston, Newport, West Warwick, Warwick, Pawtucket, Providence and Woonsocket). Rhode Island's state Pre-K program is serving 306 children and their families this year. RIDE has budgeted, based on the state school funding formula, for the FY16 increase of \$1,000,000 bringing the total number of state-funded Pre-K classrooms to 22, reaching 396 children and their families.

Increasing funding for continued expansion over time is a part of the state's education funding formula. By 2022, RI expects to dramatically increase the number of children participating in the state Pre-K, from the current 306 to 1,062 children across the state. As the state's investment in Pre-K grows, it will be important to learn from our early experiences and maintain the quality standards that have been committed to, in order to ensure the highest return on the state's investment.

## NEXT STEPS CONTINUED

Rhode Island could save

**\$126,055,097**

on pre-k through grade 12  
education by 2030.



### Continuing to evaluate the state Pre-Kindergarten program

In order to ensure that the state Pre-K program is maintaining the highest standards and providing the quality programming that is proven to have effects on children's outcomes, Rhode Island is investing in continued evaluation of the state Pre-K program and has developed, in coordination with NIEER, a Pre-K program evaluation plan to measure the quality of RI's Pre-K programs and the effects of Pre-K participation on children's outcomes over time. RIDE anticipates having the first round of program quality data in Fall 2015.

### Continuing to provide quality supports and technical assistance

The results of the Pre-K Demonstration study clearly showed that high quality technical assistance and quality supports contributed to improved program quality. In addition, we know from the research (RAND, 2008) that reaping the monetary payoffs of early childhood services (in the forms of improved child outcomes and economic savings) is clearly tied to the quality of those services. Because of this, Rhode Island is providing research-based professional development opportunities and data-driven on-site technical assistance designed to increase the quality of state-funded Pre-K programs.

These steps will assure the continued quality of the state-funded Pre-K program as it expands and maintain Rhode Island's commitment to ongoing quality improvement within participating classrooms. By doing so, Rhode Island is positioned well for potential federal investments in state Pre-K and most importantly will continue to prepare more children for success in Kindergarten and beyond. 



# APPENDIX A: HISTORY

## National Enrollment in State-Funded Pre-K Programs

Up until 2009, Rhode Island was among 12 states that did not offer state-funded Pre-K. Now Rhode Island stands among the 40 states in the country that have launched major pre-Kindergarten education initiatives. Enrollment in state-funded surged between 2000-2010, but after a decade of growth, national Pre-K enrollment stagnated in 2012 with only 28% of four year olds and 4% of three year olds enrolled in a state-funded Pre-K program (Barnett, Carolan, Fitzgerald & Squires, 2012). Researchers point to economic factors, such as the lag in state revenues recovering following the Great Recession, as the cause for the stall in pre-Kindergarten enrollment (Barnett & Carolan, 2013). In early 2013, in an attempt to boost state capacity to expand access to preschool, President Obama's administration proposed Preschool for All, a federal initiative that supports providing children from families with low- and moderate-incomes (at or below 200% of the federal poverty line) access to high quality Pre-K.

## Rhode Island's Start: the Pre-K Exploration Work Group

Rhode Island's efforts to establish a state-funded Pre-K program began in September 2007, when Peter McWalters, then Commissioner of the Rhode Island Department of Elementary and Secondary Education, and Elizabeth Burke Bryant, Executive Director of Rhode Island KIDS COUNT, invited approximately 30 people to serve on a focused, short-term committee to "explore the potential for expanding access to high-quality Pre-Kindergarten programs for young children in Rhode Island."

The Pre-K Exploration Committee was co-chaired by Commissioner McWalters and Elizabeth Burke Bryant and included the Chairman of the Board of Regents for Elementary and Secondary Education as well as representatives from state government, city government, the early childhood education community including Head Start and child care, K-12 education, higher education, a teacher's union, the General Assembly, and other community-based organizations and businesses.

## Pre-K Design Team

In response to this legislative directive, Commissioner McWalters appointed a Pre-K Planning Group comprised of fifteen (15) people, including some representatives of the original Pre-K Exploration Committee plus additional individuals who had expertise in early childhood education, to provide feedback and recommendations to RIDE related to the structure and implementation strategy for a Pre-K Program in Rhode Island.

- **The work of the team was focused on addressing the following topics:**
- **How should the Pre-K Pilot be structured?**
- **What will the per child and per classroom costs need to be to meet structure and quality standards?**
- **What are the Pre-K Pilot Start-up needs and costs?**
- **What is the Pre-K Pilot implementation and roll out plan?**
- **What is the Pre-K expansion plan?**
- **What is the Pre-K evaluation plan?**
- **What is the plan for developing the workforce to build the supply of qualified early childhood educators?**

In responding to these questions and making recommendations, the Pre-K Planning Group considered existing research, the work of the Pre-K Exploration Committee, information on Pre-K programs in other states, data on schools and early education programs in Rhode Island, and Rhode Island's desired school readiness and school success outcomes. In February of 2009, the Pre-K Planning Group finalized its recommendations to RIDE. For further details, the Pre-K Planning Group summary is located on the Rhode Island Department of Education's website at [www.ride.ri.gov/EC-Programs-PreK](http://www.ride.ri.gov/EC-Programs-PreK).

The Pre-K Exploration Committee met several times to 1) examine access to high-quality early education in Rhode Island, 2) consider the impact of Pre-K on early childhood development and efforts to close the achievement gap, 3) identify effective strategies to increase access to high-quality Pre-K programs for 3- and 4- year olds, and 4) learn from other states that had designed and financed Pre-K programs.

In February of 2009, the Pre-K Exploration Group finalized its recommendations which informed the *2010 Rhode Island Pre-Kindergarten Act*.

### RI Pre-K Legislation

As a result of the Pre-K Exploration Committee's work, the Rhode Island General Assembly passed the *Rhode Island Pre-Kindergarten Act* which directed RIDE to begin planning an initial, pilot pre-Kindergarten program that would meet high quality standards, build on the existing early childhood education infrastructure in the state (including child care, Head Start and public schools) and serve children ages 3 and 4 who resided in communities with concentrations of low performing schools. The Act also specified that the Rhode Island Pre-K program pilot would be expanded over time starting with communities that had a highest concentration of low-performing schools.

*The Act* notes that there are substantial numbers of children in Rhode Island entering kindergarten who are not adequately prepared to succeed in school, which may ultimately contribute to these children dropping out of school, failing to achieve their full potential, becoming dependent on public assistance or becoming involved in criminal activities. By enacting the Act, the General Assembly acknowledged the need to adequately prepare all children to succeed in school by providing access to a publicly-funded high-quality pre-Kindergarten education program.

### Rhode Island's Pre-K Demonstration Project

Funding for the Pre-K Demonstration Project was appropriated by the RI General Assembly for state FY 2010, and combined with private foundation resources from the United Way and the RI Foundation. The appropriation was used to fund the seven initial RI Pre-K Demonstration Project classrooms for four-year-olds, beginning in September of 2009.

As Rhode Island was getting to ready to launch its first Pre-K pilot, the National Institute for Early Education Research (NIEER), a nationally respected early childhood education research organization, expressed interest in using funding from a Pew Charitable Trust grant to conduct a 2-year randomized control research design to study the effects of Rhode Island's Pre-K pilot on participants. The Rhode Island Pre-K pilot offered opportunities to conduct a landmark randomized control trial because:

1. **The pilot was open to families of all income levels,**
2. **A lottery was used to determine enrollment, and**
3. **Program standards met benchmarks for key indicators of classroom quality.**

Not only does this type of research design produce results that are most easily understood by policy makers and legislators but it also produces statistically sound findings from small sample sizes.

With no other current studies using a randomized control design available, this was a significant opportunity for both Rhode Island and NIEER, providing NIEER with research that adds to the impact of national research and Rhode Island the opportunity to demonstrate the direct benefit of Pre-K to Rhode Islanders. Dr. W. Steven Barnett, Director of the National Institute for Early Education Research noted that such a design is rare because public officials are often reluctant to depart from usual procedures. Unfortunately this makes it difficult to disentangle a program's influence from the effects of child and family characteristics.

# APPENDIX B: THE ASSESSMENT TOOLS

During the course of the study, children's receptive vocabulary, emergent literacy, early math skills, and socio-emotional skills were assessed at the beginning and end of the school year.

The following child assessment instruments were administered.

- *Language: The Peabody Picture Vocabulary Test – Third Edition (PPVT – III) and Test de Vocabulario en Imagenes Peabody (TVIP).* The PPVT-III (Dunn & Dunn, 1997) is a 204-item test of receptive vocabulary in standard English. The TVIP (Dunn, Lugo, Padilla, & Dunn, 1986) uses 125 translated items from the PPVT to assess receptive vocabulary acquisition of Spanish-speaking and bilingual students. NIEER has used both versions of the instrument in studies nationwide and have found that they are useful in discriminating growth across a broad range of children.
- *Math: The Woodcock-Johnson Psycho-Educational Battery-Third Edition (WJ-III) and the Bateria Psico-Educativa Revisada de Woodcock-Muñoz (WM-R).* The WJ-III and WM-R (Woodcock & Johnson, 1989; Woodcock & Munoz-Sandoval, 1996) are comprehensive sets of individually administered tests of cognitive abilities and achievement.
- *The Test of Preschool Early Literacy (TOPEL; Lonigan, Wagner, Torgesen, & Rashotte, 2007) and the Preschool Comprehensive Test of Phonological and Print Processing (Pre-CTOPPP; Lonigan, Wagner, Torgesen, & Rashotte, 2002).* The TOPEL (in English) and Pre-CTOPPP (in Spanish) will be used to assess Print Knowledge. Print Knowledge items measure whether children recognize individual letters and letter-sound correspondences, and whether they differentiate words in print from pictures and other symbols.

- *The Head-Toes-Knees-Shoulders Task (HTKS, Ponitz et al., 2008).* We anticipate using the HTKS as a quick measure of behavioral regulation. The HTKS is presented as a two-part game in which children are asked first to copy movements demonstrated by an examiner and then to perform movements that are the opposite of the movement requested by the examiner.
- *The Early Literacy Skills Assessment (ELSA, DeBruin-Parecki, 2005).* The ELSA measures four key principles of early literacy: comprehension, phonological awareness, alphabetic principle, and concepts about print. It has 23 items presented in a children's storybook form which is very attractive to the children.

Child testing sessions lasted about 30 minutes. At the beginning of the school year, children were administered the PPVT-III, WJ-III, TOPEL, and HTKS. At the end of the school year, children were again administered these same measures. Also, in the spring, a second testing session was added in which children were administered the ELSA.

A parent survey/interview was also used to gather information about family income and level of education. The parent survey was conducted in two parts. The first part was conducted when the children signed up for the enrollment lottery. The second part of the survey was conducted by phone later in the school year.

All teachers were asked to fill out a short teacher survey about their experience, education, and linguistic capacity. In addition, to gather further information about the preschool or child care experiences of children who were not selected to attend pre-K through the lottery, teachers of children in the control group were asked to participate in an additional survey or in-person interview regarding teaching practices and features of their classroom.

## APPENDIX B CONTINUED

Several aspects of Pre-K classroom quality were also studied through structured observations of classrooms, which were conducted in the fall of 2010 and spring 2011. Individual classroom reports detailing any changes in teacher practices were presented in the spring. Each classroom was observed for one day with the following preschool observational measures:

- *The Early Childhood Environment Rating Scale - Revised (ECERS-R;* Harms, Clifford and Cryer, 1998). The ECERS-R provides a global measure of preschool classroom quality with 43 items that cover a broad range of quality considerations from safety to teacher-child interaction to parent involvement.
- *The Classroom Assessment of Supports for Emergent Bilingual Acquisition (CASEBA;* Freedson, Figueras, & Frede, 2008). The CASEBA is a research tool designed to assess the degree to which preschool teachers and classrooms are providing support for the social, cognitive and linguistic development of English Language Learners, with a focus on language and literacy. It consists of 26 distinct rating scale items which cluster around six broad aspects of the early childhood curriculum; each item measures one component of a high-quality classroom environment and instruction, based on what research tells us about effective language and emergent literacy supports for 3- to 5-year-old children who speak a language other than English at home, and who are in the process of acquiring English as a second language.
- *The Preschool Rating Instrument for Science and Math (PRISM;* Stevenson Boyd, Brenneman, & Frede, 2008). The PRISM measures the presence of classroom materials and teaching strategies that support early science and mathematical concept development. Math items assess supports for counting, comparing, estimating, and recognizing number symbols; measurement; classifying and seriating; geometric thinking and spatial relations. Science items focus on materials and teaching interactions that support explorations of biological and non-biological science; encourage reading, writing, and drawing about science; encourage investigations and discussions of scientific concepts; and support observing, predicting, comparing, and contrasting.
- *The Classroom Assessment Scoring System (CLASS;* Pianta, LaParo and Hamre, 2005). The CLASS is an observational system that assesses classroom practices in preschool through third grade by measuring the interactions between students and adults. These practices are broadly grouped across three domains of quality of instruction, social/emotional climate and classroom management. (This is a potential measure but we have not made a final determination of whether or not it will be used.)





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