The New Mexico PreK Evaluation:

Results from the Initial Four Years of a New State Preschool Initiative

FINAL REPORT

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EXECUTIVE SUMMARY

State-funded prekindergarten programs now play a major role in children's educational experiences during the year before kindergarten entry. These types of programs were operating in 38 states by 2008, representing an investment of $4.6 billion in state funds, and serving more than 1.1 million children nationwide. New Mexico's state-funded prekindergarten initiative, known as New Mexico PreK, was established in 2005 through the work of Governor Bill Richardson, Lieutenant Governor Diane Denish, and the New Mexico Legislature. It is one of the most recently started prekindergarten initiatives in the United States, but has already expanded quickly during the past four years due to annual increases in state appropriations for PreK.

The State of New Mexico funded the National Institute for Early Education Research (NIEER) to carry out a comprehensive evaluation of the New Mexico PreK initiative, beginning in its first year of operation. This evaluation has included four main components:

1. Examining the benefits received by children who participate in PreK
2. Investigating PreK classroom quality
3. Conducting an analysis of the economic impacts of the PreK program
4. Gathering information about parent and provider perceptions toward the PreK initiative through focus groups

Estimates of the effects of New Mexico PreK on participating children have been based on a statistical approach known as the regression-discontinuity design (RDD). This methodologically rigorous research design takes advantage of New Mexico's strict preschool and kindergarten eligibility dates to provide unbiased estimates of the effects of PreK. To date, this method has been used three times in New Mexico – during fall 2006, fall 2007, and fall 2008 – to estimate the impacts of PreK on young children's language, literacy, and math skills.

Our results show that New Mexico PreK produces consistent benefits for children who participated in PreK, compared to those who did not, across all three years of the study. Positive impacts of PreK were found in each of three content areas important to early academic success – language, literacy, and math. Findings in literacy and mathematics were statistically significant in analyses for each school year of New Mexico PreK. Findings specific to our measure of early language were statistically significant for the first two years of the study, and using a combined, multi-year data set. Further research is needed to determine whether apparent decreases in vocabulary scores of children attending successive years of the PreK program are meaningful. Additional

analyses of the impacts of PreK have focused on providing separate estimates for the two state agencies that share administrative responsibility for the New Mexico PreK initiative – the Children, Youth and Families Department (CYFD) and the Public Education Department (PED). The results suggest that PreK programs operated by PED and CYFD have very similar impacts on young children. Overall, our findings suggest that New Mexico PreK improves children's readiness for kindergarten in key academic areas, across different types of PreK settings.

Using a battery of classroom observation tools, we have also provided annual estimates of several aspects of quality in New Mexico PreK classrooms. Overall classroom quality

has been good. Our analyses show that PreK classrooms have scored highest on a Teaching and Interactions factor that measures aspects of the classroom environment including general supervision, using language both to develop reasoning and more informally, and staff-child interactions and interactions among children. Classrooms have tended to score slightly lower, but still approached good quality, on a Provisions for Learning factor focusing on aspects of the classroom environment such as room arrangement, schedule, gross motor equipment, and dramatic play.

In addition to examining overall classroom quality, we examined classroom supports for early language and literacy, and for mathematics. New Mexico PreK classrooms provided an average level of support for early language and literacy, based on a measure that focuses on both the environment for literacy and teaching activities related to language and literacy. Levels of support for early math were poor, based on a measure that focuses on classroom materials and teaching activities related to mathematics.

Classroom quality scores using each of our three observation tools – which cover overall classroom environment, language and literacy support, and mathematics support – were relatively stable across the four years of this study. However, in the first year of the study, scores for the mathematics tool and for the Teaching and Interactions factor of the overall quality measure reached levels not attained in later years of this research. In each successive year of the study, larger numbers of classrooms have been observed, allowing for more precise estimates of classroom quality and reducing the potential for error in our estimates. Further analyses of classroom quality at CYFD and PED PreK sites show that quality in PreK sites operated by the two state agencies is similar.

The economic impact analysis conducted as part of this evaluation suggests that there are good economic reasons to invest in New Mexico PreK and the children it serves. PreK can improve educational outcomes by reducing the numbers of children retained in grade, lowering the number of children eligible for special education, and increasing graduation rates. The economic impact analysis finds that an estimated $5.00 in benefits are generated in New Mexico for every dollar invested in New Mexico PreK. The benefit to U.S. society is estimated at $6.17 for every dollar invested in New Mexico PreK. It is estimated that New Mexico PreK participants will have better educational outcomes that produce higher earnings. They will be less likely to engage in criminal behavior, to be victims of abuse and neglect, and to use welfare services. The real rate of return to New Mexico's state-funded prekindergarten program is an estimated 18.1 percent to New Mexico and an estimated 22.3 percent as a whole.

Finally, results from focus groups conducted with families of New Mexico PreK children and PreK service providers supplement our quantitative results with valuable qualitative data. These results suggest that participants are very supportive of PreK and want to see the program expanded further. Families and providers reported seeing specific, tangible improvements in child academic and social outcomes for those who attended PreK. Both providers and families would like to see more funding for PreK to fine tune the program. The funding priorities identified for PreK included providing funds for more slots, improved teacher salaries and benefits, transportation services, and increased family involvement activities. Focus group members appreciated the resources already available for teacher and staff training, materials and supplies, and staff-child ratios.

Based on the findings summarized in this final report, we conclude with three policy recommendations:

1. Continued expansion of the New Mexico PreK initiative is warranted. New Mexico PreK produces meaningful and statistically significant positive impacts on children's early language, literacy, and math skills, but fewer than 5,000 (roughly 17 percent) of the approximately 29,000 4-year-olds in New Mexico are currently enrolled. By further increasing enrollment in its PreK initiative, New Mexico has a clear opportunity to show leadership in the western U.S., where state preschool enrollment levels have traditionally been low.

2. Some aspects of classroom quality in the New Mexico PreK program are in need of improvement. Measures of general classroom quality show that New Mexico PreK classrooms are above average. However, more specialized measures show that support for early language and literacy is fair and support for early mathematics is poor. As New Mexico PreK continues to expand, it is important for the state to maintain and possibly strengthen current work with PreK providers so that they can continue to improve children's learning environments in the key content areas of language, literacy, and math.

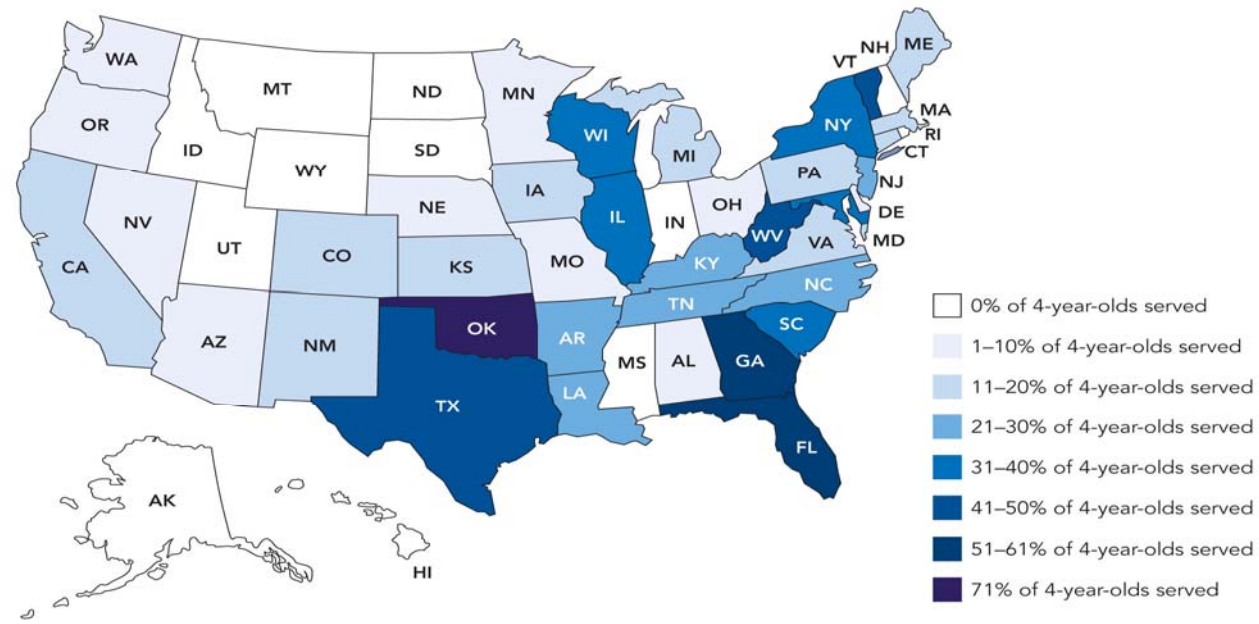
3. Expanded professional development and teacher training opportunities are keys to improving classroom quality, and simultaneously offer the potential to bolster child outcomes associated with PreK participation. Investments in high-quality staffing are a good solution to issues of classroom quality. One potentially valuable investment would be to ensure higher education has the capacity to enable every lead teacher in New Mexico PreK to obtain a bachelor's degree with strong specialized training in preschool education.

STATE-FUNDED PRESCHOOL PROGRAMS IN CONTEXT

Most children in the U.S. now have their first school experiences in a preschool classroom rather than in kindergarten. State preschool programs have played a major role in the expansion of early education during the past 20 years. By 2008, state pre-K programs were operating in 38 states, and served more than 1.1 million children nationwide using $4.6 billion in state dollars (Barnett, Epstein, Friedman, Stevenson Boyd, & Hustedt, 2008). At age 4, one in four American children now attends a program that can be classified as state pre-K. Some states have committed to making state pre-K available to all 4-year-olds whose parents would like them to attend. Oklahoma has come closest to meeting this goal, with 71% of its 4-year-olds enrolled.

Despite many years of overall growth in state pre-K initiatives, there have been few research studies evaluating the statewide effectiveness of these programs. Among studies that do exist, few have been methodologically rigorous (Gilliam & Zigler, 2004). However, studies of well-known model preschool initiatives including the High/Scope Perry Preschool program, the Abecedarian Early Childhood Intervention program, and the Chicago Child-Parent Centers show that these types of programs produce economic benefits greatly outweighing their costs (Barnett, 1996; Masse & Barnett, 2002; Reynolds, Temple, Robertson, & Mann, 2002). Benefits have included higher achievement test scores, lower rates of special education placements and grade repetition, improved high school graduation rates, and reduced crime and delinquency rates.

FIGURE 1: PERCENT OF 4-YEAR-OLDS SERVED IN STATE PRE-K



NEW MEXICO PRE-K IN CONTEXT

Established in 2005 through the work of Governor Bill Richardson, Lieutenant Governor Diane Denish, and the New Mexico Legislature, New Mexico PreK is among the most recently started state prekindergarten initiatives nationwide. New Mexico PreK is designed to serve 4-year-olds during the year before kindergarten. PreK classrooms feature maximum class sizes of 20 with staff-child ratios of 1:10, and offer a variety of comprehensive and family support services in addition to their educational emphasis. Standards requiring lead teachers to have bachelor's degrees and licensure in early childhood education are being phased in, such that teachers not yet meeting the requirements must make ongoing progress toward meeting them within five years.

Administrative responsibility for New Mexico PreK is shared by the state Children, Youth and Families Department (CYFD) and the state Public Education Department (PED). Thus, while PED and CYFD sites participate in a single, unified PreK initiative, in any program evaluation it is important to provide state-level summary data as well as data disaggregated by each sponsoring agency.

Growth in Funding and Number of New Mexico PreK Students Budgeted Since 2005

School Year	State Appropriation	Students Budgeted (% of New Mexico's 4-Year-Olds)
2005-2006	$4,950,000	1,540 (5.8%)
2006-2007	$7,990,000	2,194 (7.9%)
2007-2008	$13,998,886	3,570 (12.8%)
2008-2009	$19,290,300	4,745 (16.5%)
2009-2010 (anticipated)	$19,842,400	4,963 (17.3%)

Note: Percentages of New Mexico's 4-year-olds were calculated based on U.S. Census Population Estimates for New Mexico, using data from the fall of each school year. As fall 2009 population estimates are not yet available, the percentage for the 2009-2010 school year was calculated based on the fall 2008 population estimate.

New Mexico PreK is one of a number of early childhood initiatives funded by the State of New Mexico. Other programs include a home visiting initiative; a state supplement to the federal Head Start program; and the K-3 Plus initiative, which offers participants 25 additional instructional days each year from kindergarten through third grade. These state initiatives are complementary efforts providing a variety of supports to young children and their families.

The New Mexico PreK initiative has grown quickly since it launched during the 2005-2006 school year, due to annual increases in state fiscal appropriations each year that have allowed for increases in enrollment. This growth in enrollment is particularly notable given that the western United States has tended to lag behind other regions of the country in making state prekindergarten programs available to children (Barnett, Hustedt, Hawkinson, & Robin, 2006). Among the 13 states designated as being in the West region by the U.S. Census, only seven currently offer a state prekindergarten program, and California, Colorado, and New Mexico are the only states where enrollment has exceeded 10 percent of the 4-year-old population in recent years.

Like the New Mexico PreK initiative itself, this research study began during the 2005-2006 school year. As a result, we are able to provide information about the effectiveness of New Mexico PreK in its initial years of operation, and during a period of rapid expansion. This study is one of several rigorous state preschool evaluations recently conducted by the National Institute for Early Education Research (NIEER) in states across the U.S. Each of these studies uses similar methodologies and measures to estimate the impacts of prekindergarten on young children's academic skills.

The comprehensive New Mexico PreK program evaluation has included four main components:

1. Examining the benefits received by children who participate in PreK
2. Investigating PreK classroom quality
3. Conducting an analysis of the economic impacts of the PreK program
4. Gathering information about parent and provider perceptions toward the PreK initiative through focus groups

Findings from each component are summarized in this final report on the initial four-year evaluation of the New Mexico PreK initiative.

KEY RESEARCH QUESTIONS: CHILD AND CLASSROOM DATA

The New Mexico PreK Evaluation was designed to provide information about the impacts of the PreK program on children, as well as information about the quality of PreK classrooms.

Specifically, the child and classroom components of the study addressed the following research questions.

- Compared to children who do not attend New Mexico PreK, how do PreK participants benefit in terms of:
    - * Language development?
    - * Math skills?
    - * Literacy skills?

- What is the quality of New Mexico PreK classrooms in terms of:
    - * Overall classroom quality?
    - * Classroom support for early language and literacy?
    - * Classroom support for mathematics?

- When data from CYFD and PED PreK programs are examined separately, what are the benefits to children and what is the quality of classrooms?

CHILD AND CLASSROOM MEASUREMENT TOOLS

We gathered data using standard batteries of child assessment and classroom observation tools in PreK programs across the state of New Mexico. These instruments provide a breadth of information across key content areas and are regularly used in other research studies. Each child assessment instrument includes both English and Spanish versions so that children can be assessed in their best testing language.

Child assessment tools, and their areas of emphasis, include:

- The *Peabody Picture Vocabulary Test, 3rd Edition* (PPVT-III; Dunn & Dunn, 1997): vocabulary knowledge
- The *Woodcock-Johnson Tests of Achievement, 3rd Edition* (WJ-III; Woodcock, McGrew & Mather, 2001) Subtest 10 Applied Problems: mathematical skills
- The *Test of Preschool Early Literacy* (TOPEL; Lonigan, Wagner, Torgesen, & Rashotte, 2007) Print Knowledge subtest: early literacy. Prior to publication of the TOPEL, we used an earlier version of this instrument known as the Pre-CTOPPP (Lonigan, Wagner, Torgesen, & Rashotte, 2002).

Classroom observation tools, and their areas of emphasis, include:

- The *Early Childhood Environment Rating Scale – Revised* (ECERS-R; Harms, Clifford, & Cryer, 2005): overall classroom quality
- The *Support for Early Literacy Assessment* (SELA; Smith, Davidson, & Weisenfeld, 2001): practices that support early language and literacy
- The *Preschool Classroom Mathematics Inventory* (PCMI; Frede, Weber, Hornbeck, Stevenson Boyd, & Colon, 2005): materials and methods used to support math skills

All data for the New Mexico PreK Evaluation were collected by New Mexico-based child assessors and classroom observers who received in-depth instruction from expert trainers based at NIEER. Child assessment data were collected in fall of 2006, 2007, and 2008; classroom observation data were collected in the second half of each school year. Results specific to each content area investigated through our child assessment and classroom observation tools are presented on the pages that follow.

ESTIMATING THE IMPACTS OF NEW MEXICO PRE-K

Estimates of the effects of the New Mexico PreK initiative on 4-year-old participants are based on a sophisticated statistical approach known as the regression-discontinuity design (RDD). A typical approach in state prekindergarten evaluations is to estimate the effects of an initiative by comparing test scores of children who attended the PreK program with scores of similar children who did not. However, as programs become more widely available, it is more difficult to find a comparable group of children who did not attend PreK. Even where programs target only a subset of children, such as those from low-income families, the issue of *selection bias* remains. Simply put, children who attend preschool are different from children who do not. Preschool programs targeting specific groups of children create these differences, but differences also come about because only some parents choose to enroll their children. In sum, children who attend state prekindergarten programs differ from those who do not because programs select children and families select programs.

Our estimates of the impacts of PreK address selection bias by comparing two groups of children, where children in both groups attended the New Mexico PreK initiative. The comparisons rely on New Mexico's use of a stringent cut-off date for eligibility for PreK and kindergarten (September 1). The eligibility cut-off date can be used to define two groups of children needed for this study: a group of children just beginning PreK and a group of children who already completed PreK. This concept is easier to understand by providing an extreme example: consider two children who differ only in that one was born the day before the age cut-off and the other the day after. When both are about to turn 5 years old the slightly younger child will enter PreK and the slightly older child will enter kindergarten having already completed PreK. If both children are tested at that time, the difference in their scores provides an unbiased estimate of effect of PreK. If only children with birthdays one day on either side of the age cut-off were included in a study, the potential sample size would be too small. However, the approach can be applied to wider age ranges around the cut-off. All children entering kindergarten having completed New Mexico PreK, and all children beginning New Mexico PreK the same year, can be included in our analyses.

During the past few years, the RDD approach has been used to estimate the impacts of state-funded prekindergarten programs in a number of states, most notably Oklahoma (Gormley, Gayer, Phillips, & Dawson, 2005). It was first possible to use this approach in New Mexico in fall 2006 – when children who participated in the initial year of New Mexico PreK entered kindergarten. The RDD approach was repeated again with new samples of New Mexico PreK participants in fall 2007 and fall 2008.

DESCRIBING OUR SAMPLES

The table below provides information about children who participated in our study. These samples of children correspond to RDD analyses for the 2005-2006, 2006-2007, and 2007-2008 school years, respectively, and results from those analyses are presented immediately following the table. In each year of the study, ethnicity breakdowns for our sample closely mirrored those for the New Mexico PreK initiative as a whole.

Demographic Information for Participants in This Study

	Year 1	Year 2	Year 3
Percentage female	48.8%	53.8%	53.7%
Home language			
English	80.4%	77.2%	80.5%
Spanish	14.1%	13.9%	13.3%
Both English and Spanish	3.5%	7.7%	5.5%
Other/Not specified	2.0%	1.2%	0.7%
Ethnicity			
Hispanic	56.3%	57.7%	58.0%
White	10.4%	18.4%	24.2%
Native American	27.5%	19.1%	14.0%
African American	1.4%	1.6%	1.6%
Other/Not specified	4.5%	3.3%	2.3%
Total sample size for analysis (*N*)	856	893	1,299

Note: Year 1 data were used to estimate the impacts of New Mexico PreK during the 2005-2006 school year, Year 2 data were used to estimate the impacts of New Mexico PreK during the 2006-2007 school year, and Year 3 data were used to estimate the impacts of attending New Mexico PreK during the 2007-2008 school year. Some totals do not add to 100 percent due to rounding.

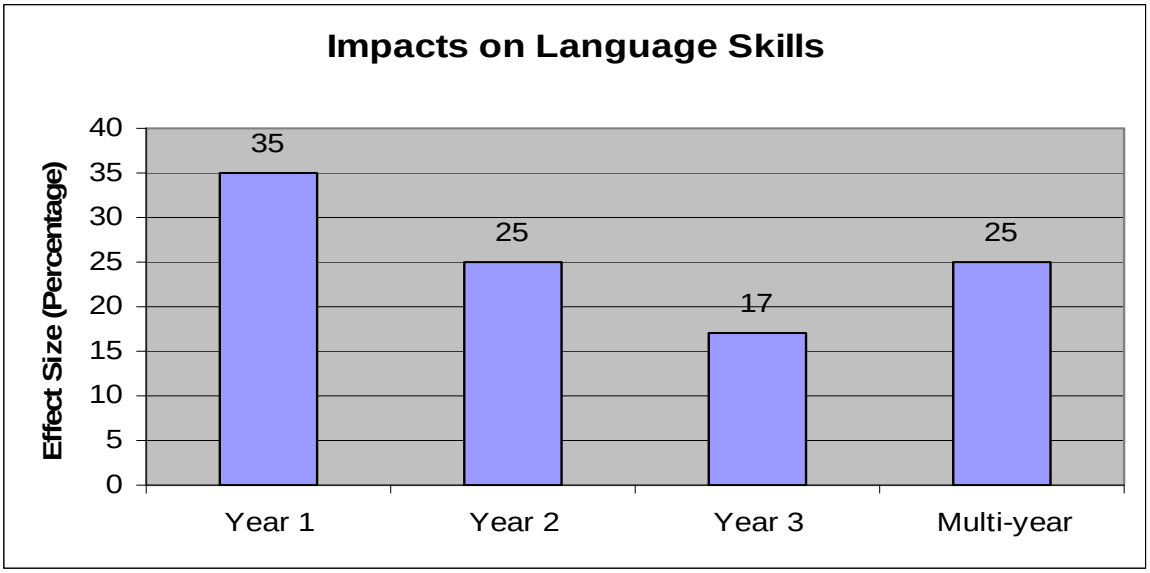
IMPACTS OF PRE-K ON CHILDREN'S LANGUAGE SKILLS

The PPVT-III was used in the New Mexico PreK Evaluation to gauge children's knowledge of spoken vocabulary words. All children in this study were initially administered the PPVT, regardless of their home language, to get a sense of their receptive vocabulary skills in English. Children who spoke some Spanish were also subsequently administered the *Test de Vocabulario en Imagenes Peabody* (TVIP; Dunn, Padilla, Lugo, & Dunn, 1986). We measured the impacts of PreK participation on children's skills at kindergarten entry in fall 2006, fall 2007, and fall 2008. Fall 2006 data help us understand the impacts of PreK participation in the 2005-2006 school year, fall 2007 data speak to the impacts of PreK participation in the 2006-2007 school year, and fall 2008 data speak to the impacts of PreK participation in the 2007-2008 school year. At the conclusion of this initial phase of the study, we also conducted multi-year analyses measuring the impacts of PreK participation across the first three years of the initiative. These multi-year analyses are more statistically powerful because they incorporate a larger sample.

We found that:

- Children who participated in New Mexico PreK during the 2005-2006 school year scored 7.82 points higher on the vocabulary measure than children who did not participate. This increase was statistically significant.
- Children who participated in New Mexico PreK during the 2006-2007 school year scored 5.55 points higher on the vocabulary measure than children who did not participate. This increase was also statistically significant.
- Children who participated in New Mexico PreK during the 2007-2008 school year scored 3.42 points higher on the vocabulary measure than children who did not participate. This increase approached, but did not reach, statistical significance.
- Across the first three years of the PreK initiative, children who participated in New Mexico PreK scored an average of 5.44 points higher on the vocabulary measure than children who did not participate. This increase was statistically significant.

We also summarized our child outcome data from each year of the study using effect sizes, which help to standardize estimated effects of the PreK program across different types of measures and across successive years of the study. These figures represent percentage improvement, relative to the standard deviation for the control group. The chart below summarizes effect sizes for children's early language (receptive vocabulary) skills, with estimates for each year of our data as well as an overall estimate encompassing data from all three years of the study.



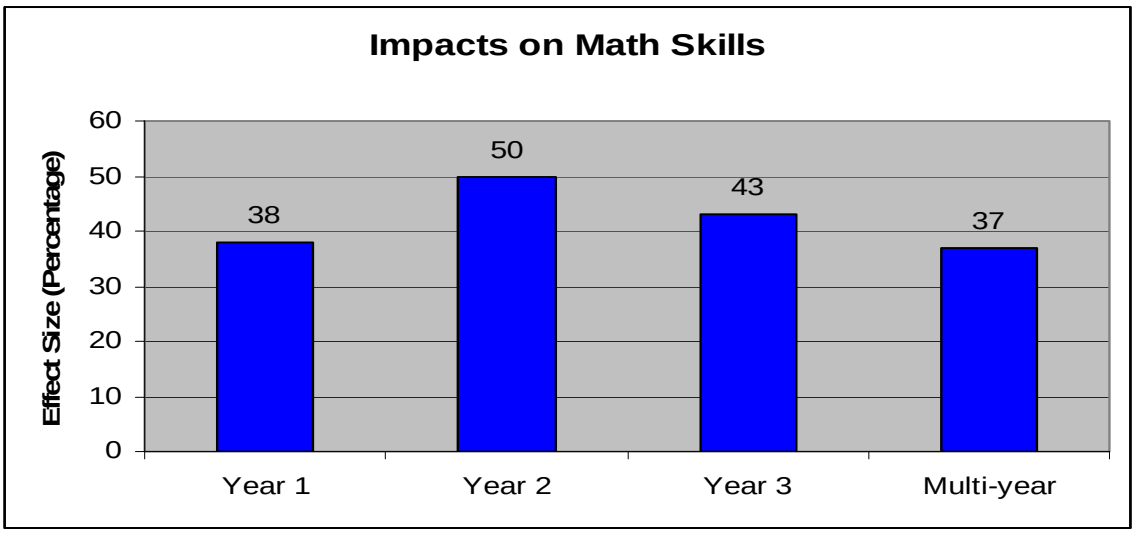
Note: Year 1 shows the impact of attending New Mexico PreK during the 2005-2006 school year, Year 2 shows the impact of attending New Mexico PreK during the 2006-2007 school year, and Year 3 shows the impact of attending New Mexico PreK during the 2007-2008 school year. All data are based on PPVT-III raw score results.

IMPACTS OF PRE-K ON CHILDREN'S MATH SKILLS

The WJ-III was used to gauge children's early math skills. For children whose best testing language was Spanish, the companion *Bateria Woodcock-Munoz Pruebas de Aprovechamiento – Revisado* (Woodcock & Munoz, 1990) *Prueba 25 Problemas Aplicados* was used instead. We found that:

- Children who participated in New Mexico PreK during the 2005-2006 school year scored 1.64 points higher on the mathematics measure than children who did not participate. This increase was statistically significant.
- Children who participated in New Mexico PreK during the 2006-2007 school year scored 2.26 points higher on the mathematics measure than children who did not participate. This increase was statistically significant.
- Children who participated in New Mexico PreK during the 2007-2008 school year scored 1.86 points higher on the mathematics measure than children who did not participate. This increase was statistically significant.
- Across the first three years of the PreK initiative, children who participated in New Mexico PreK scored an average of 1.63 points higher on the mathematics measure than children who did not participate. This increase was also statistically significant.

The chart below summarizes effect sizes for children's math skills.



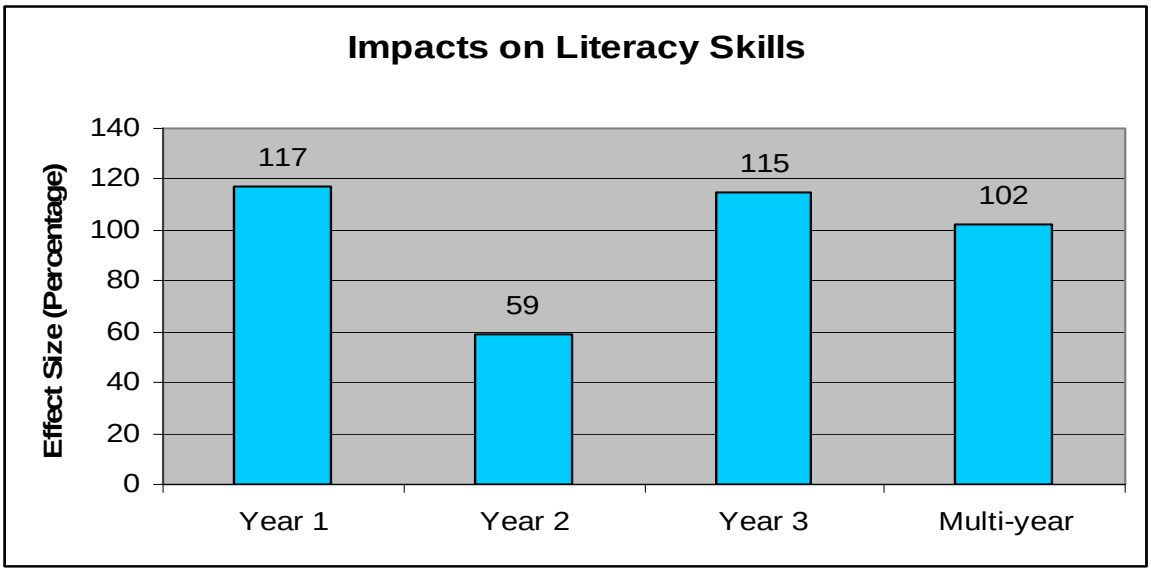
Note: Year 1 shows the impact of attending New Mexico PreK during the 2005-2006 school year, Year 2 shows the impact of attending PreK during 2006-2007, and Year 3 shows the impact of attending PreK during 2007-2008. The impacts on math skills using our multi-year data set are somewhat smaller than estimates for each individual year, due to variations in the statistical models selected as most appropriate for different years of the study. Data are based on raw scores from the WJ-III Applied Problems subtest.

IMPACTS OF PRE-K ON CHILDREN'S LITERACY SKILLS

The TOPEL (or its forerunner, the Pre-CTOPPP) was used to gauge children's early literacy skills. For children whose best testing language was Spanish, the appropriate companion version remains the Spanish version of the Pre-CTOPPP. We found that:

- Children who participated in New Mexico PreK during the 2005-2006 school year scored 26 percent higher on the early literacy measure than children who did not participate. This increase was statistically significant.
- Children who participated in New Mexico PreK during the 2006-2007 school year scored 14 percent higher on the early literacy measure than children who did not participate. This increase was statistically significant.
- Children who participated in New Mexico PreK during the 2007-2008 school year scored 28 percent higher on the early literacy measure than children who did not participate. This increase was statistically significant.
- Across the first three years of the PreK initiative, children who participated in New Mexico PreK scored an average of 24 percent higher on the early literacy measure than children who did not participate. This increase was statistically significant.

The chart below summarizes effect sizes for children's early literacy skills.



Note: Year 1 shows the impact of attending New Mexico PreK during the 2005-2006 school year, Year 2 shows the impact of attending New Mexico PreK during 2006-2007, and Year 3 shows the impact of attending New Mexico PreK during 2007-2008. Data are based on percentages of correct answers on the Pre-CTOPPP Print Awareness subtest (Year 1) or TOPEL Print Knowledge subtest (Years 2 and 3).

IMPACTS OF PRE-K AT CYFD AND PED SITES

In the final year of this initial evaluation of New Mexico PreK, we increased our sample sizes to allow for separate statistical estimates of the impacts of PreK programs offered by CYFD and those offered by PED. It is important to view New Mexico PreK as a single statewide initiative regardless of the lead state agency responsible for any given classroom. However, these disaggregated data allow us to more closely examine the impacts of PreK sites administered by each agency.

Large samples are required in order to detect a statistical effect for these separate analyses, and the 2007-2008 school year was the first in which we had sufficiently large CYFD and PED samples. The table on the following page provides more demographic information about study participants attending PED and CYFD sites. As noted previously, our demographic breakdowns show that ethnicities of children in our overall, aggregated samples closely mirror those in the New Mexico PreK initiative as a whole. Based on demographic breakdowns for the CYFD and PED samples during the 2007-2008 school year, the two agencies appear to serve slightly different populations of children.

Also, although the 2007-2008 school year is the only school year where there were enough participants in the study to perform adequate disaggregated analyses, we conducted additional analyses using a multi-year data set that combines results across each of the first three years of New Mexico PreK. These analyses have more statistical power, due to the larger sample sizes.

Demographic Information for PED and CYFD PreK Participants (2007-2008)

	PED	CYFD	Overall
Percentage female	54.7%	52.5%	53.7%
Home language			
English	78.1%	83.6%	80.5%
Spanish	16.2%	9.9%	13.3%
Both English and Spanish	5.1%	5.7%	5.5%
Other/Not specified	0.6%	0.8%	0.7%
Ethnicity			
Hispanic	58.8%	57.1%	58.0%
White	16.7%	32.3%	24.2%
Native American	21.1%	6.2%	14.0%
African American	1.5%	1.8%	1.6%
Other/Not specified	2.1%	2.4%	2.3%
Total sample size for analysis (*N*)	684	609	1,299

Note: Some totals do not add to 100 percent due to rounding. The overall totals include all children in our sample in both PED and CYFD programs. For six children, insufficient information was recorded to allow children to be classified as attending a PED or CYFD site.

Findings for children's language skills show that:

- Children who participated in PED programs during the 2007-2008 school year scored 2.70 points higher on the vocabulary measure than children who did not participate. This increase was not statistically significant.
- Children who participated in CYFD programs during the 2007-2008 school year scored 5.38 points higher on the vocabulary measure than children who did not participate. This increase approached, but did not reach, statistical significance.

- Across the first three years of the PreK initiative, children who participated in PED programs scored an average of 5.38 points higher on the vocabulary measure than children who did not participate. Children who participated in CYFD programs scored an average of 6.27 points higher. The increases for both PED and CYFD programs approached statistical significance.

Findings for children's mathematics skills show that:

- Children who participated in PED programs during the 2007-2008 school year scored 1.39 points higher on the mathematics measure than children who did not participate. Children who participated in CYFD programs scored an average of 2.73 points higher. The increases for both PED and CYFD programs were statistically significant.
- Across the first three years of the PreK initiative, children who participated in PED programs scored an average of 1.44 points higher on the math measure than children who did not participate. Children who participated in CYFD programs scored an average of 1.91 points higher. The increases for both PED and CYFD programs were statistically significant.

Findings for children's early literacy skills show that:

- Children who participated in PED programs during the 2007-2008 school year scored 29 percent higher on the early literacy measure than children who did not participate. Children who participated in CYFD programs during the 2007-2008 school year scored 28 percent higher on the early literacy measure than children who did not participate. The increases for both PED and CYFD programs were statistically significant.
- Across the first three years of the PreK initiative, children who participated in PED programs scored an average of 26 percent higher on the early literacy measure than children who did not participate. Children who participated in CYFD programs scored an average of 23 percent higher. The increases for both PED and CYFD programs were statistically significant.

Overall, the impacts for CYFD and PED programs were very similar, both for the 2007-2008 school year and in analyses spanning the first three years of the New Mexico PreK initiative. This was the case across all three content areas examined in this study—young children's language, mathematics, and literacy skills.

CHILDREN'S GAINS DURING THE 2008-2009 SCHOOL YEAR

As mentioned earlier, our RDD approach relies on having a group of children who have already completed PreK and are entering kindergarten. Due to this fact, it was not possible to estimate the impacts of participating in the New Mexico PreK initiative during the 2008-2009 school year before the completion of this evaluation cycle. Instead, we collected beginning- and end-of-school-year data on a sample of PreK children in fall 2008 and spring 2009. The results below provide some preliminary information about the gains made by children during the course of the 2008-2009 school year, although this methodology does not allow us to determine the degree to which those gains are attributable to PreK.

Gains Made by Children During the 2008-2009 School Year

	Fall 2008 Scores	Spring 2009 Scores
Language (PPVT-III Raw Score)		
PED sites	42.99	57.12
CYFD sites	48.28	61.10
New Mexico PreK Overall	45.43	58.96
Math (WJ-III Applied Problems Raw Score)		
PED sites	9.03	12.91
CYFD sites	10.23	13.93
New Mexico PreK Overall	9.58	13.38
Literacy (TOPEL Print Knowledge % Correct)		
PED sites	26.66	53.61
CYFD sites	34.56	56.27
New Mexico PreK Overall	30.29	54.84

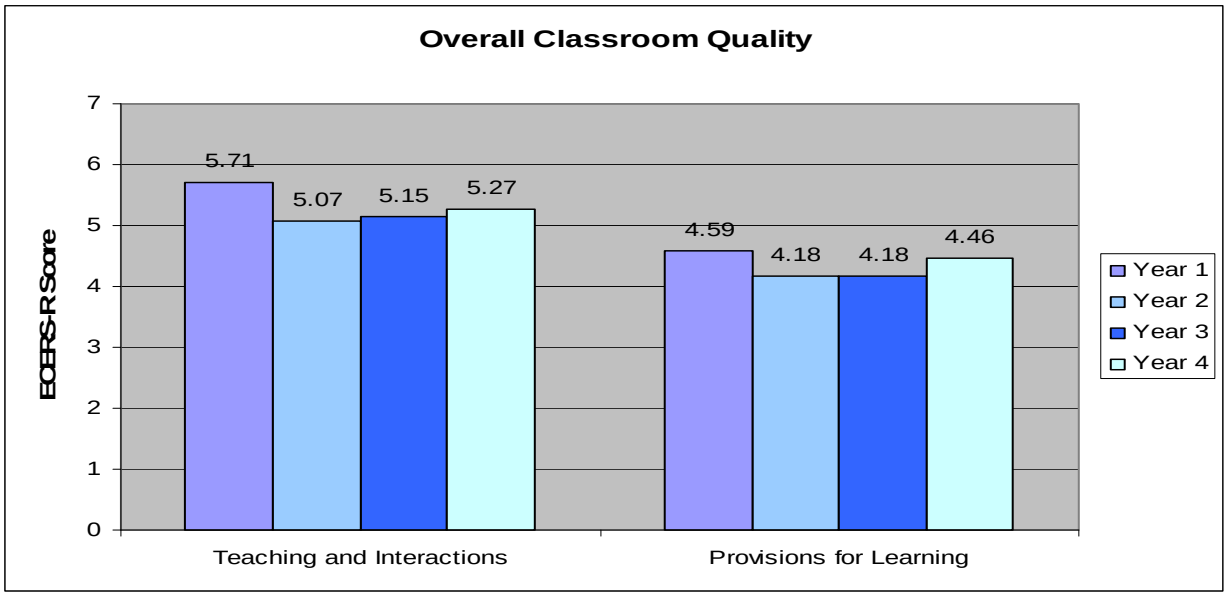
Note: All scores for each measure are estimated mean scores. Overall sample sizes ranged from 518 children to 526 children depending on the specific measure.

OVERALL CLASSROOM QUALITY

Overall classroom quality was measured using the ECERS-R, a standardized measure that is commonly used in evaluation studies. The ECERS-R focuses on aspects of the classroom environment in the areas of space and furnishings, personal care, language and reasoning, activities, interaction, program structure, and parents and staff. Analyses of data from the ECERS-R frequently employ a two-factor model. Our analyses use the following factors established in previous research (Clifford et al., 2005).

- Factor 1 – *Teaching and Interactions* – aspects of the classroom environment such as general supervision, using language both to develop reasoning and more informally, and staff-child interactions and interactions among children
- Factor 2 – *Provisions for Learning* – aspects of the classroom environment such as room arrangement, schedule, gross motor equipment, and dramatic play

The ECERS-R is scored on a 7-point scale where "1" indicates inadequate quality, "3" indicates minimal quality, "5" indicates good quality, and "7" indicates excellent quality. We measured classroom quality in PreK programs across the state during the second half of each school year in 2006, 2007, 2008, and 2009. These data allow us to examine trends in program quality over time, as the PreK initiative tripled in size. Results for Factor 1 and Factor 2 across each year of the study are shown below. Scores for Factor 1 were above a "5" each year, with quality exceeding the "good" level. Scores for Factor 2 were above a "4" each year, with quality approaching the "good" level.



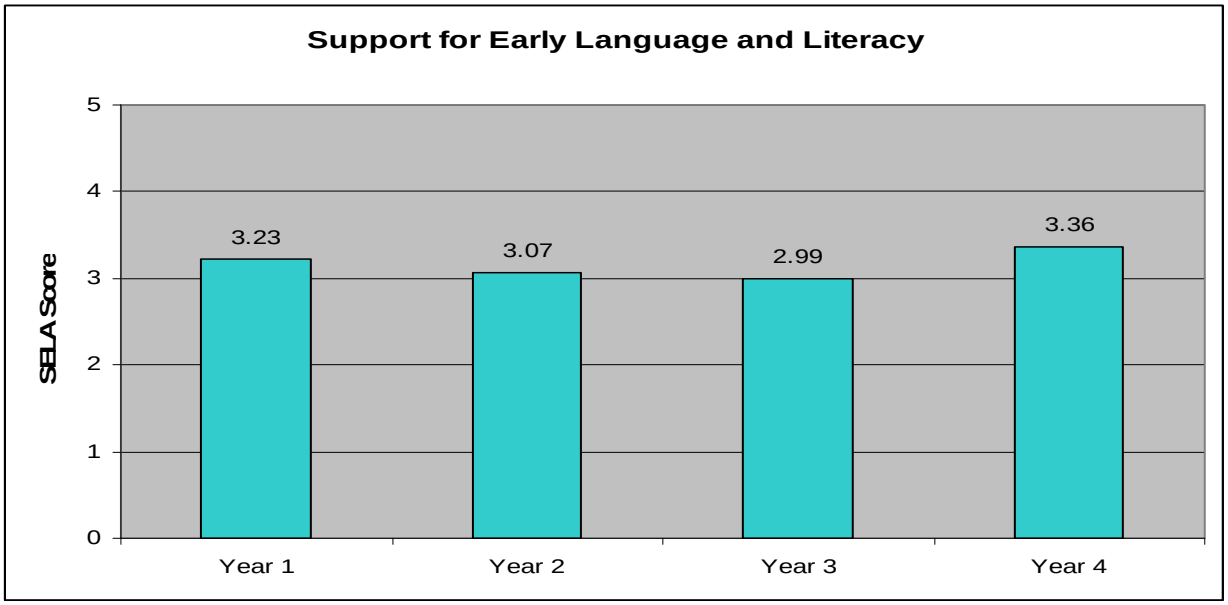
Note: Year 1 represents the 2005-2006 school year, Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.

CLASSROOM SUPPORT FOR EARLY LANGUAGE AND LITERACY

Classroom support for early language and literacy was measured using the SELA, which examines the quality of the preschool literacy environment and instruction. The SELA provides a more detailed assessment of teacher practices supporting language and literacy than the more global ECERS-R measure. This tool has six subscales: The Literate Environment, Language Development, Knowledge of Print/Book Concepts, Phonological Awareness, Letters and Words, and Parent Involvement.

The SELA is scored on a 5-point scale, where "1" indicates very low quality, "2" indicates poor quality, "3" indicates fair or mediocre quality, "4" indicates good quality, and "5" represents the ideal.

The SELA was administered in New Mexico PreK programs across the state on the same dates that classroom observers administered the ECERS-R, during the second half of each school year. Average SELA scores from each year of the study are shown in the chart below. For each year of the study New Mexico PreK classrooms received SELA scores that were very near the midpoint of the 5-point scale, indicating fair to mediocre support for early language and literacy. However, if the Year 4 scores represent a trend, then the classrooms are heading into the good range.



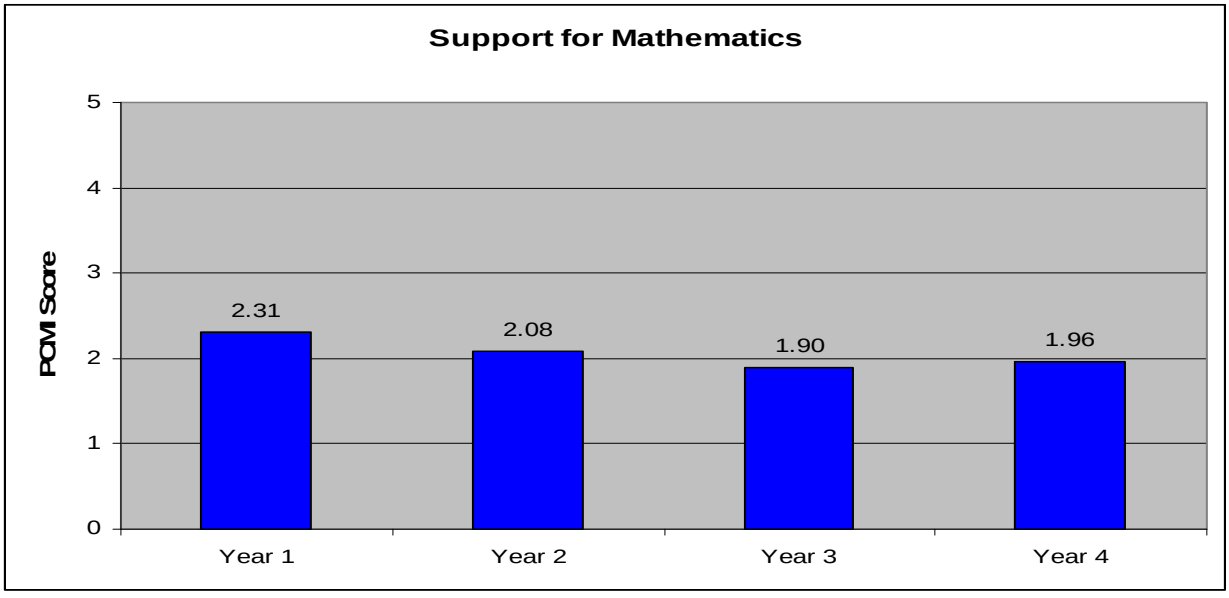
Note: Year 1 represents the 2005-2006 school year, Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.

CLASSROOM SUPPORT FOR MATHEMATICS

Classroom support for the development of children's early math skills was measured using the PCMI. This tool measures the materials and strategies used in the classroom to support children's early mathematical concept development, including counting, comparing, estimating, recognizing number symbols, classifying, seriating, geometric shapes, and spatial relations.

Similar to the SELA, the PCMI is scored on a 5-point scale. On this scale, "1" indicates very low quality, "2" indicates poor quality, "3" indicates fair or adequate quality, "4" indicates good quality, and "5" represents the ideal.

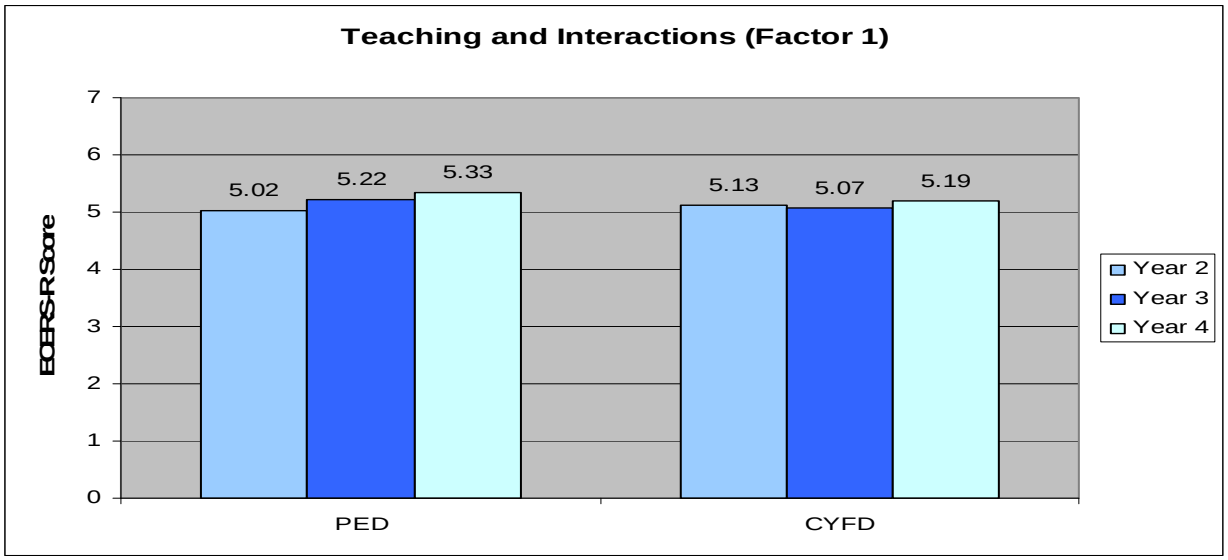
The PCMI was administered in New Mexico PreK programs across the state on the same dates that our classroom observers administered the ECERS-R and SELA, during the second half of each school year. Average PCMI scores from each year of the New Mexico PreK Evaluation are shown in the chart below. For each year of the study, New Mexico PreK classrooms received scores that were near "2" and indicative of poor quality on the 5-point PCMI scale.



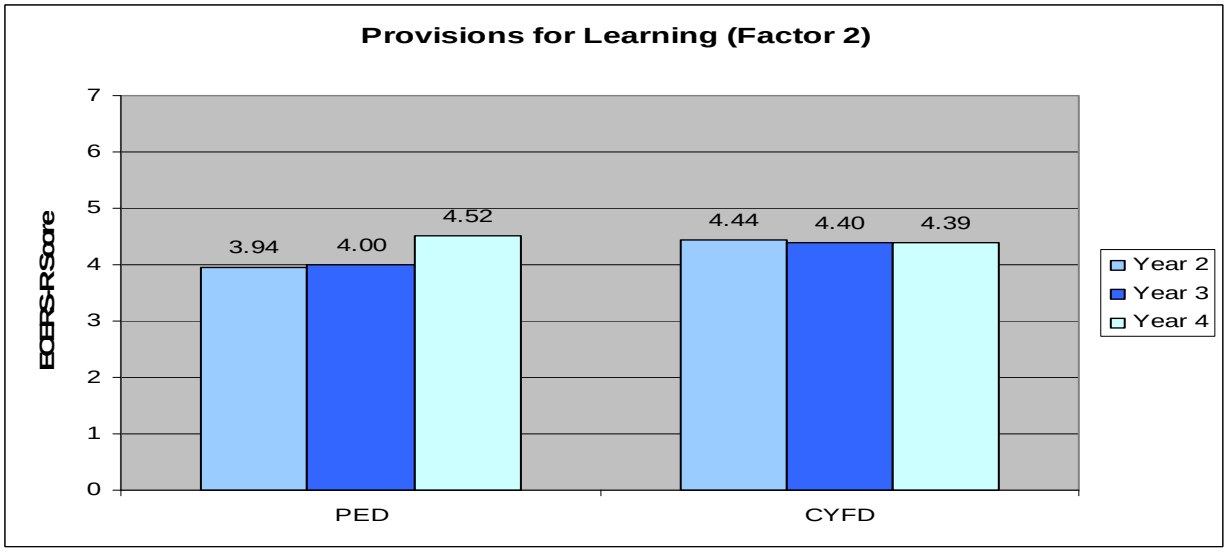
Note: Year 1 represents the 2005-2006 school year, Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.

CLASSROOM QUALITY AT PED AND CYFD SITES

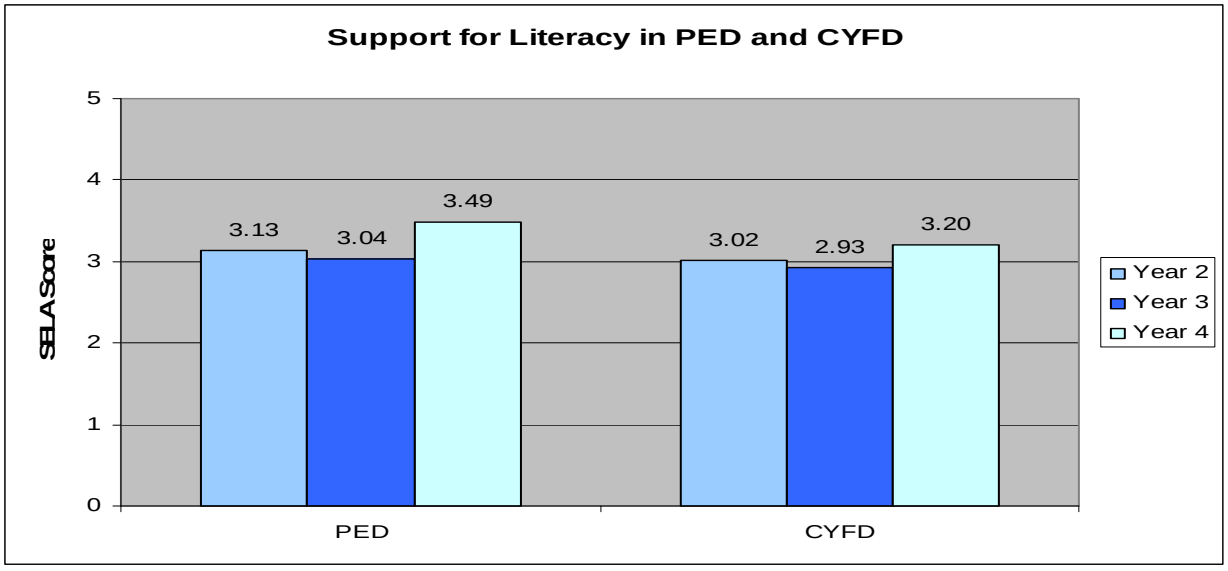
In Years 2 through 4 of the New Mexico PreK Evaluation, classroom quality was also examined separately for New Mexico PreK programs administered by CYFD and those administered by PED. Results for each of the classroom observation tools are shown in the figures in this section. In general, overall classroom quality, support for early language and literacy, and support for mathematics were fairly similar across both CYFD and PED programs.



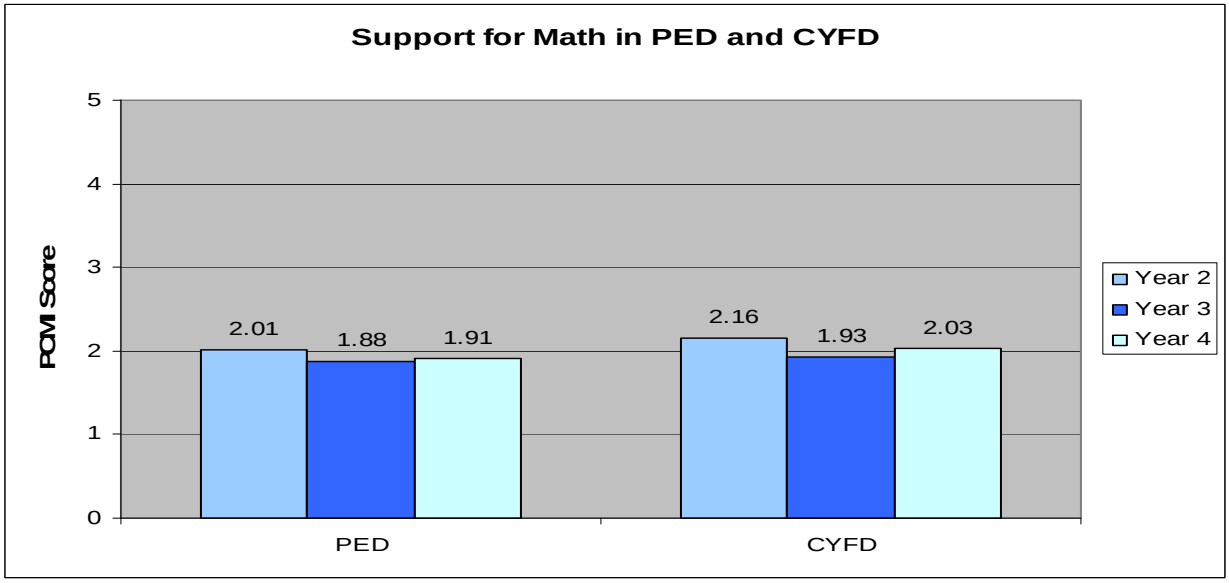
Note: Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.



Note: Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.



Note: Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.



Note: Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year.

TEACHERS IN THE NEW MEXICO PRE-K CLASSROOMS

Below, we provide additional information about the New Mexico PreK teachers who participated in our study. These data suggest that there were few changes to the average qualifications of New Mexico PreK teachers between the 2005-2006 school year and the 2008-2009 school year.

New Mexico PreK Teacher Demographics

	Year 1	Year 2	Year 3	Year 4
Mean number years teaching preschool	5.76	7.47	6.15	5.31
Highest degree earned				
Less than Bachelor's degree	26.7%	20.2%	27.1%	27.4%
Bachelor's degree	42.7%	39.4%	45.8%	46.8%
Master's degree or higher	18.7%	19.1%	16.8%	15.1%
Not specified	12.0%	21.3%	10.3%	10.8%
Percentage certified in early childhood	22.7%	38.3%	43.9%	32.3%
Number of classrooms and teachers in sample (*N*)	75	94	107	139

Note: Year 1 represents the 2005-2006 school year, Year 2 represents the 2006-2007 school year, Year 3 represents the 2007-2008 school year, and Year 4 represents the 2008-2009 school year. Some totals do not add to 100 percent due to rounding.

ECONOMIC IMPACTS OF UNIVERSAL PRE-K IN NEW MEXICO

In addition to examining impacts of New Mexico PreK on children and PreK classroom quality, this study also included an economic impact analysis. The economic impact analysis was conducted during the 2006-2007 school year, and was modeled on an economic impact analysis of state-funded preschool in California (Karoly & Bigelow, 2005). The approach was based on a participatory action research (PAR) approach to evaluate the costs and benefits of diverse longitudinal services and outcomes for children who participate in New Mexico PreK. Data were obtained for regular, special, and higher education costs as well as costs associated with juvenile detention and adult criminal behavior. The study also included estimates from child protective services related to the cost of services for foster care and other services associated with child abuse and neglect. Child care cost and wages were estimated based on New Mexico labor force data. Where data from New Mexico were unavailable, data were obtained from the literature and federal databases to estimate the benefits that accrue from investing in state-funded prekindergarten.

The distribution of benefits and costs to local, state, and federal government and to participants and society as a whole was analyzed to determine the cost-benefit ratio for New Mexico and for the U.S. In addition, adjustments were made for inflation and discounting so that the net present value of the investment in the program was estimated, along with the internal rate of return. The underlying effects or impacts were based on the Chicago Child Parent Center Study (CPC) and included a variety of educational attainment outcomes, juvenile delinquency, adult crime, health outcomes, and child welfare measures. Weights were calculated using New Mexico demographic data – particularly those reflecting New Mexico's unique character – to adjust the CPC impacts to reflect the realities of New Mexico's children and families. A sensitivity analysis was also completed to estimate the costs and benefits to New Mexico and to the U.S. under a variety of assumptions. These data provided a range of benefit-cost ratios that would be expected under more and less conservative analytical assumptions – such as the percentage of benefits that accrue for high- and low-risk students who participate in New Mexico PreK.

Results of this analysis are summarized in the table on the next page. The findings show strong support for the New Mexico PreK initiative.

Present Value Costs and Benefits for Universal Preschool in New Mexico in the Baseline Model (In Dollars Per Child and Dollars Per Cohort of 4-Year-Olds)

Source of Costs or Benefits	Benefits (Costs) to Society New Mexico Only		Benefits (Costs) to Society U.S. Total	
	Dollars Per Child	Dollars Per Cohort (Thousands)	Dollars Per Child	Dollars Per Cohort (Thousands)
Program costs	-2,961	-62,181	-2,961	-62,181
Program benefits				
Education outcomes	889	18,669	1,174	24,654
Child welfare outcomes	114	2,394	190	3,990
Juvenile crime outcomes	1,831	38,451	1,831	38,451
Value of child care	2,272	47,712	2,272	47,712
College attendance	-113	-2,373	-113	-2,373
Adult crime outcome	932	19,572	932	19,572
Labor market earnings	7,771	163,191	10,845	227,745
Health	1,115	23,415	1,137	23,877
Total benefits	14,811	311,031	18,268	383,628
Net benefits	11,850	248,850	15,307	321,447
Benefit-Cost Ratio ($/$1)	5.00		6.17	
Internal Rate of Return (%)	18.1%		22.3%	

SOURCE: Authors' calculations based on cost-benefit table.

Notes: All amounts are in 2005 dollars and the present value of amounts over time where future values are discounted to age 4 of the participating child, using a 3 percent annual real discount rate. Dollars-per-cohort figures assume a cohort of 30,000 4-year-olds and a 70 percent preschool participation rate. Numbers may not add because of rounding.

FINDINGS FROM THE ECONOMIC IMPACT ANALYSIS

There are good economic reasons to invest in New Mexico PreK and the children it serves. The key findings of the economic impact analysis include:

1. **Prekindergarten services can improve educational outcomes.** For every year that PreK is provided to New Mexico's 4-year-olds there are:
   - 1,213 fewer children ever retained in grade
   - 803 fewer children ever using special education services
   - 5,513 fewer child years of special education service use
   - 882 more high school graduates
   - 2,599 more child years of education completed

2. **Prekindergarten services can be cost-beneficial.** If high-quality preschool services are delivered as outlined in the New Mexico service guidelines that were developed in collaboration among PED, CYFD, the Governor's Office, and the Department of Finance and Administration:
   - The return on a dollar investment is estimated to be at least $3.72 and may be as high as $10.53 in real dollars.
   - For every dollar spent on New Mexico PreK services we estimate, using the baseline assumptions, that there will be $6.17 per child in benefits generated from the program.
   - Five dollars in benefits are estimated to be generated to New Mexico for every dollar invested in New Mexico PreK.
   - The net present value to society of a one-year high-quality preschool program in New Mexico is estimated at $15,307.
   - New Mexico PreK generates an estimated $11,850 in net present value benefits to New Mexico society (i.e., New Mexico participants and taxpayers), for each annual cohort of children, assuming 70 percent of those eligible will participate in PreK.
   - These data conclude that New Mexico PreK participants:
     - Have better educational outcomes that will produce higher earnings.
     - Are less likely to engage in juvenile and adult criminal behavior.
     - Are less likely to be victims of abuse and neglect.
     - Are less likely to use welfare services, along with their families.

3. **Prekindergarten services can increase economic development.**
   - The real rate of return to New Mexico's state-funded prekindergarten program is estimated at 18.1 percent to New Mexico and 22.3 percent as a whole.

4. **States recognize the strong evidence and have responded by increasing their investment in prekindergarten services.**
    - As noted previously, 38 states invested $4.6 billion to serve more than 1.1 million children in 2008. Both enrollment and total state spending have been increasing steadily this decade. Enrollment and state spending have increased rapidly in New Mexico since the PreK initiative began in 2005.

Even the most conservative assumptions used in the analysis showed positive net benefits from investing in New Mexico PreK services. The strength and magnitude of these economic impacts have led researchers to conclude it is a public policy failure not to see early childhood as a top economic development issue in the United States. The return on prekindergarten investment is greater than other public and private investments that states undertake.

The benefit estimates are necessarily incomplete since they only include benefits measured in dollars and omit intangible benefits that are attributable to PreK. For example, benefits from reducing child abuse and neglect omit many of the intangible benefits from improved child well-being of participants. They also omit many benefits that accrue to the next generation of children born to participants and their parents.

Findings similar to those presented for New Mexico have been documented in other states. The impetus for expansion in state efforts to fund preschool is in part due to the compelling case that prekindergarten services are a sound public investment. There is a large body of high-quality economic research concluding that there are many positive, quantifiable dollar benefits from investing in children during their preschool years. The findings in this economic impact study reveal the benefits to New Mexico from expanded investments in the PreK Program.

PARENT AND PROVIDER COMMUNITY FOCUS GROUPS

A final component of the New Mexico PreK evaluation involved conducting focus groups. Ten focus groups were completed in five different communities in New Mexico in Year 1, and 10 more were completed in Year 3 of the study. Five of the focus groups held each year were with families who had children enrolled in PreK and the other five were with PreK providers in the state. Focus groups were held in Gallup, Gadsden (Anthony), Roswell, Espanola, and Las Vegas.

In the focus groups we found the following perceptions by New Mexico citizens toward the PreK initiative.

What is the purpose of New Mexico PreK?

- Prepare children for school
- Fill a need for a free program available to all New Mexico's children and families
- Involve families in their child's learning and educational experience
- Involve families and provide family support for child's learning
- Develop social skills and positive attitudes toward learning
- Improve New Mexico's education standing
- Insure that children enter kindergarten ready to learn
- Improve long-term educational outcomes for children

What are the perceived outcomes of New Mexico PreK?

- State-funded PreK provides a needed service without stigma.
- PreK serves children who would not get services elsewhere.
- Families report dramatic gains in social and pre-academic skills.
- Overall level of teacher quality, training opportunities, and classroom experiences is high.
- Multi-cultural opportunities are available.
- Parents learn early how to help children learn and support their child's educational experiences.
- Children are better prepared for kindergarten academically and socially.
- Co-location with other programs (Head Start, child care) provides more comprehensive services/supports.
- Good state/community relationship is established.
- A early stable learning environment is provided.
- Children's health and nutrition are improved.

What are recommendations for improving PreK?

- Increase the number of PreK slots and classrooms available.
- Improve transportation/integration with child care for working families.
- Increase per-child funding; do not spread dollars "too thin."
- Maintain quality teachers and high staff-child ratios.
- Maintain and increase support for materials and supplies.
- Encourage coordination of PreK with other services for families.
- Provide more in-house resources for family assistance like social work, health, parent liaisons to keep parents involved.
- Explore whether age 3 or 4 is a better age to start PreK and about whether services should be half- or full-day.
- Make PreK available to all families at no charge.

How did perceptions in 2008 differ from those in 2006? In 2008, families reported more consistently that:

- PreK services result in positive academic outcomes.
- Parent involvement activities are very valuable.
- PreK services should begin at age 3.
- PreK does not currently serve all who want to enroll.
- PreK services improve child's success in school.

What issues were different for families and providers?

Families said:

- Providers should involve parents more.
- Five days per week gives them and their children a consistent schedule.
- They would like more one-on-one support from teachers.

Providers said:

- Some prefer four days a week to have a day for preparation.
- Parents should focus less on academic goals.
- Parent attendance is poor when parent involvement focuses on parent education and high when the focus is on the children.
- They value professional development opportunities such as release time and increased compensation.

KEY RESULTS FROM THE NEW MEXICO PRE-K EVALUATION

In this section, we summarize key results from the cycle of the New Mexico PreK Evaluation conducted between 2005 and 2009. It is important to note that our findings are specific to the New Mexico PreK initiative and do not have implications for components of New Mexico's wider early childhood system that have different areas of emphasis, such as K-3 Plus.

Results from our child assessments show consistent benefits to children who participated in New Mexico PreK, compared to those who did not. Positive impacts of PreK were found across three content areas important to early academic success – language, literacy, and math. The rigorous research design used in this study allows us to attribute these gains in children's skills to their participation in New Mexico PreK. These overall findings are both statistically significant and meaningful.

Results from the most recent year of our study signal a decrease in average vocabulary scores for children attending successive years of the PreK initiative. During the 2007-2008 school year, unlike in previous school years, the impact of PreK on children's language skills did not reach statistical significance. In order to determine whether this potential trend is meaningful, further analyses will be needed, using data from additional school years as a new cycle of the New Mexico PreK Evaluation begins. There are no apparent trends over time for our other measures of children's academic skills. The effects of PreK on children's early literacy and mathematics skills were statistically significant for each year of the study.

Our classroom observation results provide more details about the quality of educational services offered in PreK classrooms. Overall classroom quality in the New Mexico PreK initiative has been good. Our analyses show that classrooms score highest on a Teaching and Interactions factor that measures aspects of the classroom environment including: general supervision, using language both to develop reasoning and more informally, and staff-child interactions and interactions among children. Classrooms score slightly lower, but still approach good quality, on a Provisions for Learning factor that focuses on aspects of the classroom environment such as room arrangement, schedule, gross motor equipment, and dramatic play.

In addition to investigating overall quality, we also examined classroom supports for early language and literacy, and for mathematics. New Mexico PreK classrooms provided an average level of support for early language and literacy, based on a measure focusing on both the environment for literacy and teaching activities related to

language and literacy. Levels of support for early math were poor, based on a measure focusing on classroom materials and teaching activities related to mathematics.

Classroom quality scores on each of our three observation tools – covering overall classroom environment, language and literacy support, and mathematics support – were relatively stable across the four years of this study. However, in the first year of the study (2005-2006), scores for the mathematics tool and for the Teaching and Interactions factor of the overall quality measure reached levels that were not attained

in any other year of the study. This may be due to the smaller number of classrooms observed that year. In each successive year of the study, larger numbers of classrooms have been observed, allowing for more precise estimates of classroom quality and reducing the potential for error in our estimates.

Separate analyses conducted for programs operating in CYFD settings and programs operating in PED settings show that PreK programs operating in the two types of settings had similar types of impacts on children's language, literacy, and math skills. Likewise, classroom quality was similar regardless of whether programs were operating in CYFD or PED settings.

The economic impact analysis conducted as part of this evaluation suggests that there are good economic reasons to invest in New Mexico PreK and the children it serves. The benefits identified for New Mexico are based on the unique demographic characteristics of New Mexico's citizens and cost data that are specific to New Mexico. The New Mexico economic impact analysis shows that PreK can improve short- and long-term educational outcomes by reducing the numbers of children retained in grade, lowering the number of children eligible for special education, and increasing graduation rates. The economic impact analysis finds that an estimated $5.00 in benefits is generated in New Mexico for every dollar invested in New Mexico PreK. The benefit to U.S. society is estimated at $6.17 for every dollar invested in New Mexico PreK. It is estimated that New Mexico PreK participants will have better educational outcomes that produce higher earnings. They will be less likely to engage in criminal behavior, to be victims of abuse and neglect, and to use welfare services. The real rate of return to New Mexico's state-funded prekindergarten program is estimated at 18.1 percent to New Mexico and 22.3 percent as a whole.

Finally, results from our focus group research suggest that:

- Families and providers appreciated the focus groups as a way to have their voices heard.
- Participants are very supportive of PreK and want to see the program expanded.
- Families and providers reported seeing specific, tangible improvements in child academic and social outcomes for those who attend.
- Providers and families would like to see more funding for PreK to "fine tune" the program.
- Funding priorities for PreK included providing funds for more slots, improved teacher salaries and benefits, transportation services, and increased family involvement activities.
- Focus group members appreciated the resources already available for teacher and staff training, materials and supplies, and staff-child ratios.

POLICY RECOMMENDATIONS

Based on evaluation data gathered during the first four years of operation for the New Mexico PreK initiative, we offer the following policy recommendations:

1. Continued expansion of the New Mexico PreK initiative is warranted. New Mexico PreK produces meaningful and statistically significant positive impacts on children's early language, literacy, and math skills, but fewer than 5,000 (roughly 17 percent) of the approximately 29,000 4-year-olds in New Mexico are currently enrolled. By further increasing enrollment in its PreK initiative, New Mexico has a clear opportunity to show leadership in the western U.S., where state preschool enrollment levels have traditionally been low.

2. Some aspects of classroom quality in the New Mexico PreK program are in need of improvement. Measures of general classroom quality show that New Mexico PreK classrooms are above average. However, more specialized measures show that support for early language and literacy is fair and support for early mathematics is poor. As New Mexico PreK continues to expand, it is important for the state to maintain and possibly strengthen current work with PreK providers so that they can continue to improve children's learning environments in the key content areas of language, literacy, and math.

3. Expanded professional development and teacher training opportunities are keys to improving classroom quality, and simultaneously offer the potential to bolster child outcomes associated with PreK participation. Investments in high-quality staffing are a good solution to issues of classroom quality. One potentially valuable investment would be to ensure higher education has the capacity to enable every lead teacher in New Mexico PreK to obtain a bachelor's degree with strong specialized training in preschool education.

FURTHER READING

For more information about the research summarized in this document, please consult the technical reports listed below, which were released earlier during the course of the New Mexico PreK Evaluation.

Information About Impacts of New Mexico PreK on Children's Language, Literacy, and Mathematics Skills

Hustedt, J. T., Barnett, W. S., Jung, K., & Figueras-Daniel, A. (2009). *Continued impacts of New Mexico PreK on children's readiness for kindergarten: Results from the third year of implementation*. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University. Available at: http://nieer.org/pdf/NewMexicoRDD0909.pdf.

Hustedt, J. T., Barnett, W. S., Jung, K., & Figueras, A. (2008). *Impacts of New Mexico PreK on children's school readiness at kindergarten entry: Results from the second year of a growing initiative*. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University. Available at: http://nieer.org/resources/research/NewMexicoRDD0608.pdf.

Hustedt, J. T., Barnett, W. S., & Jung, K. (2007). *The effects of the New Mexico PreK initiative on young children's school readiness*. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University. Available at: http://nieer.org/resources/research/NewMexicoReport0507.pdf.

Cost-Benefit Study

Goetze, L. D., Li, T., & Hustedt, J.T. (2007). *The economics of investing in New Mexico's state-funded pre-K program. Final report*. Logan, UT: Early Intervention Research Institute, Utah State University.

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