



# ***A Sustainable Financing Model***

## **High Quality Preschool for At-Risk Children**

### **Results from the Granite School District in Utah**

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#### **Introduction**

There is growing state and national attention on addressing the achievement gap and increasing reading proficiency by 3<sup>rd</sup> grade. As state governments continue to face challenging fiscal conditions, there is a need to identify strategies that will lead to improved school readiness for at-risk children within state education budget constraints. The sustainable financing model for high quality preschool presented in this report is one strategy that could potentially increase the resources available to school districts to invest in high quality preschool programs for at-risk children.

Voices for Utah Children, in partnership with Granite School District (GSD) Preschool Services, and with support from the United Way of Salt Lake and Goldman Sachs Bank USA, conducted a longitudinal study of the outcomes associated with 3 cohorts of 4 year olds in 11 schools most impacted by poverty attending the Granite School District's high quality Title I preschool program beginning in SY06-07. The study tracked the special education use of children from the 3 cohorts who tested as potentially eligible for special education services at 4 years old to determine how many of these children required special education services in kindergarten through the 3<sup>rd</sup> grade. Academic achievement data for all the children in the 3 cohorts was also collected to determine if the GSD preschool program has been successful in closing achievement gap through elementary school.

Research shows that at-risk children who attend high quality preschool programs use special education services at significantly reduced rates in kindergarten through the 12<sup>th</sup> grade as those at-risk children who do not attend a high quality preschool. This reduction in special education use is a cost savings to the state and federal government. The Sustainable Financing Model quantifies the cost savings achieved through reduced special education use and reinvests the savings back into the preschool program in order to serve more at-risk children. The sustainable financing model can be one component of an overall financing strategy for investments in high quality early education. This financing model will effectively shift resources from remediation to prevention and sustainably scale high quality preschool programs for at-risk children.

Early results from the Granite School District in Utah are promising. Longitudinal data from the 3 cohorts of at-risk children show that significant cost savings - approximately \$1 million - in special education have been achieved over the three year period. Had the sustainable financing model been implemented in SY06, an additional 736 children could have been served over the three years with the state cost savings, effectively doubling access to the Title I preschool program (not withstanding capacity issues) for at-risk children.

**The achievement gap for the SY06-07 Preschool Cohort included in this study has been effectively closed by 3<sup>rd</sup> grade.** The SY06-07 preschool cohort included in this report just completed 3<sup>rd</sup> grade. These students attended

preschool in the 11 schools most impacted by poverty in Granite School District and are primarily economically disadvantaged. Approximately 74 percent of the students in these schools were eligible for Free and Reduced Lunch (FRL) during SY07-08 and over 80 percent were eligible for FRL in 7 or the 11 schools during SY08-09. The 2011 3<sup>rd</sup> Grade Criterion Reference Test (CRT) scores for the SY06-07 preschool cohort showed that 76 percent were at or above proficiency in Language Arts (LA) and 80 percent were at or above proficiency in Math. The 2010 statewide percent proficient for all 3<sup>rd</sup> graders in Utah in LA was 78 percent and 71 percent in Math.

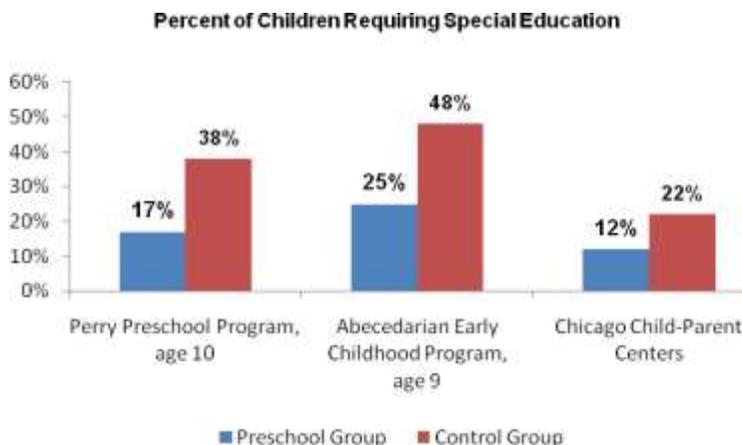
## Background

A growing body of research shows that investments in children-age birth to 5 improve school readiness and result in decreased rates of crime, teen pregnancy, delinquency, substance abuse, and welfare dependency. The science of early brain development helps illustrate how child development, before the age of 5, is the foundation for success in life and a prosperous society.<sup>1</sup>

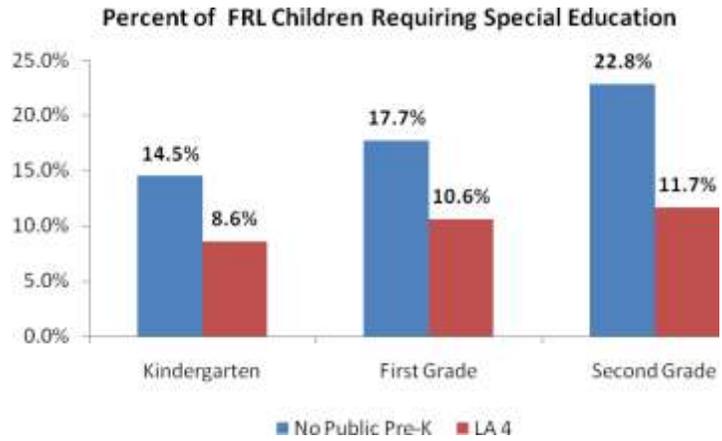
According to the Rand Corporation:

“Scientifically rigorous studies show that well-designed preschool programs serving three- and four-year olds can improve the school readiness and raise performance on academic achievement tests in the early elementary grades. Some studies with longer-term follow-up show such benefits as achievement gains and reduced special education use through the middle school years, and higher rates of high school completion. The effects in the early grades have been demonstrated not only for small-scale model programs, but also for large scale publicly funded programs currently in operation in a number of states.”<sup>2</sup>

Special education usage rates of children who attended the Perry Preschool Program, Abecedarian Early Childhood Program, and the Chicago Child-Parent Centers were half that of comparable children who did not attend preschool.<sup>3</sup>



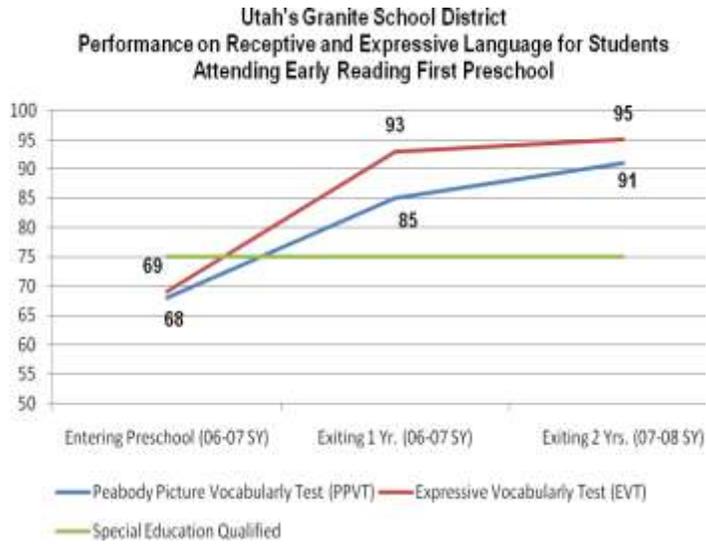
A recent study by The Foundation for Child Development of the outcomes of Louisiana’s 4 year old preschool program (“LA 4”) reported significant reductions in special education use for children who qualified for Free and Reduced Lunch (FRL), beginning in Kindergarten and lasting through the third grade.<sup>4</sup>



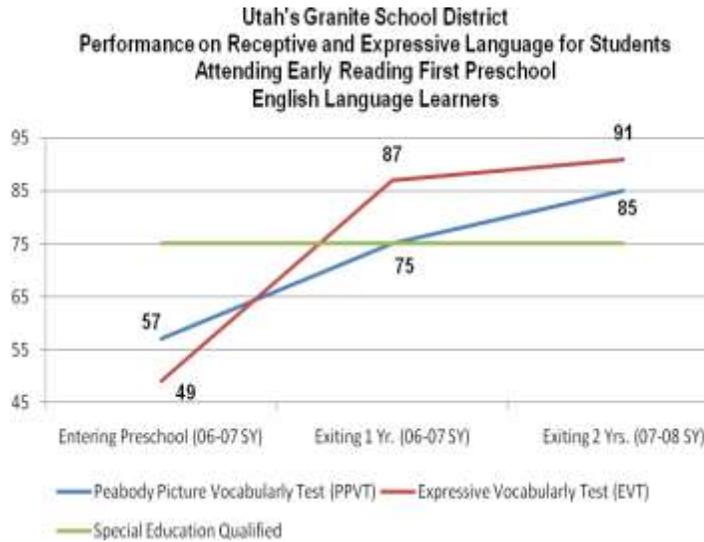
Children who enter special education in the early elementary grades will typically remain in special education for the duration of their school age years. According to national data, only approximately 5-10 percent of school age children who enter special education are declassified and transfer to general education. For the 12 months ending in the fall of 2006-07, less than 3 percent of students in special education, ages 14 to 17, were declassified and transferred to general education.<sup>5</sup>

Alternatively, research indicates that children who receive early intervention declassify at higher rates. Declassification occurs when a child is evaluated as no longer in need of special education services. Data from Washington and Colorado indicate that one-sixth to one-third of children graduating from preschool were placed in general education with no special education support. Twenty-eight percent of children receiving special education preschool in two North Carolina counties were no longer receiving special education services in elementary school. Thirty-two percent of preschoolers classified with speech impairments in a Maryland county exited special education within 4 years and approximately fifty percent of children enrolled in a special education program in Utah were no longer receiving these services within two years of their initial enrollment.<sup>6</sup>

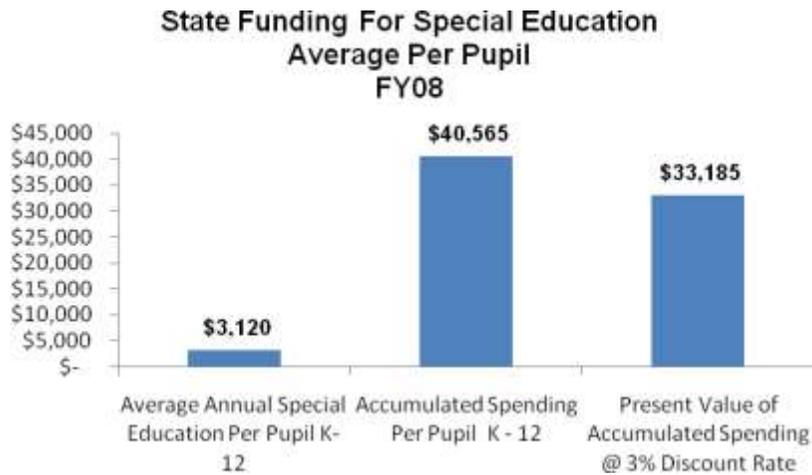
While test scores alone do not determine special education eligibility, it is one important indicator. In the Granite School District in Utah, the mean scores for all children entering preschool would have qualified them for special education (a score below 75 potentially qualifies a child for Special Ed). Upon exiting preschool after 2 years, the mean score was in the average range.



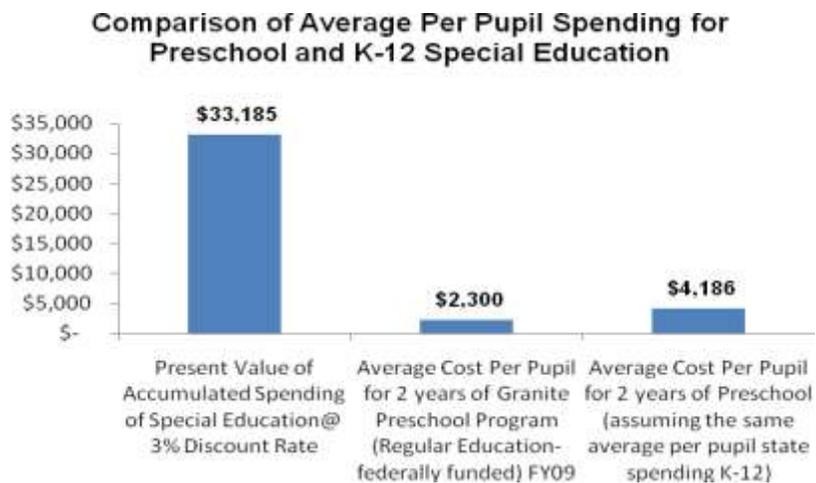
English Language Learners in the Granite School District Preschool Program scored, on average, well below the cut-off for special education upon entering preschool. However, after 2 years of preschool, the mean scores were within the average range.



Since children who enter special education in kindergarten rarely exit into regular education, the cost of providing special education services k-12 is significant. In Utah, in FY08, the average additional cost of special education services per child was approximately \$3,120. The accumulated spending per child (k through 12), assuming he or she does not exit into regular education, is approximately \$40,565. Discounted at a 3 percent discount rate, the present value of the accumulated cost is \$33,185.<sup>1</sup>



The cost of providing special education services is significantly greater than the cost of 2 years of preschool for at-risk children. The Granite School District in Utah provides high-quality preschool services in their Title I schools for a cost of \$800 for a 3 year old (1/2 day classes, 2 days a week) and \$1,500 for a 4 year old (1/2 classes, 4 days a week). Even if Utah were to spend as much per child for preschool as is spent on regular education (from state funds only), the cost of school age special education far exceeds the cost of early education.



<sup>1</sup> The present value is the value of future cash flows in current dollars. Three percent is a widely used discount rate for public sector investments.

## A Sustainable and Scalable Financing Model for High Quality Preschool

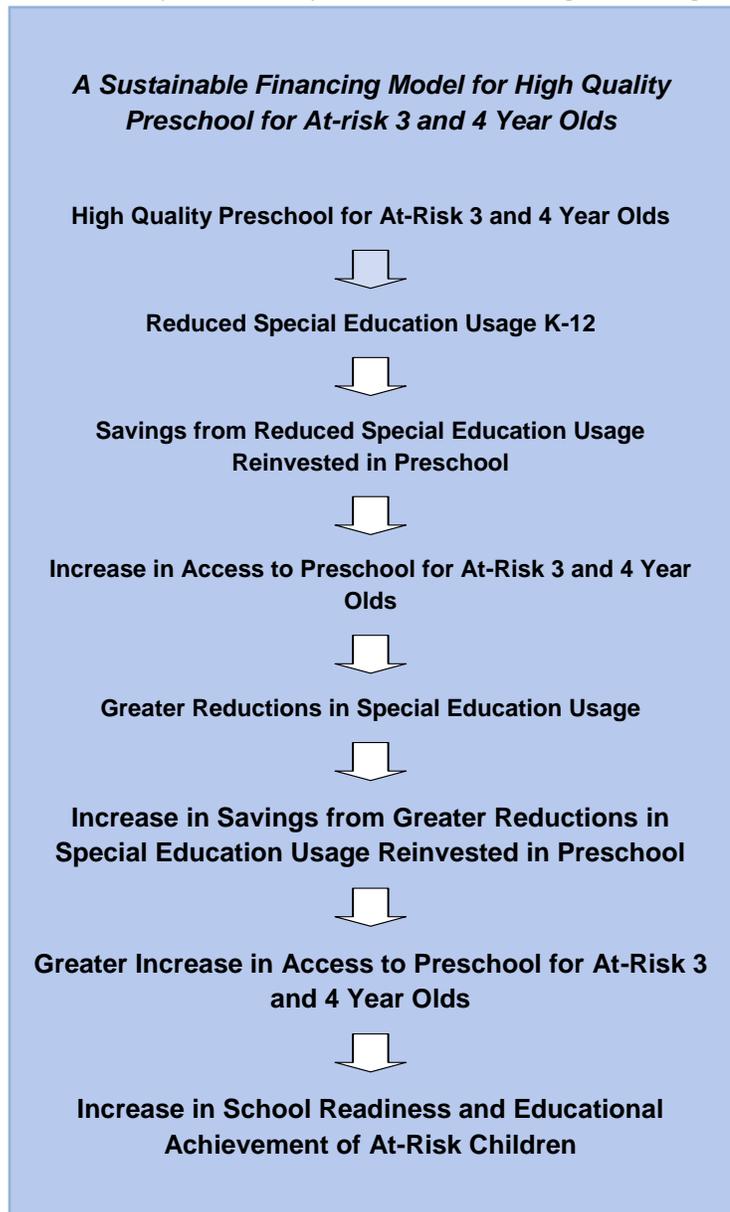
The reduction in school age special education usage resulting from high quality preschool for at-risk children is a cost savings to school districts. Currently, in Utah, school districts lose special education funding if the number of children who qualify for these services decrease. Instead, if the savings were reinvested into high quality preschool programs, access for at-risk children within the school district could be increased.

In this model, school districts would be held harmless with respect to their special education funding. The savings in k-12 special education would only be reinvested into the preschool program once the savings had been identified and realized thereby allowing school districts to shift financial resources from remediation to prevention through increased access to high quality early education within existing budget constraints. Since special education programs lose funding when head counts decrease, this model would not adversely impact special education budgets.

***This financing strategy would be sustainable and scalable.*** The more at-risk children (who qualify for special education) who receive early education and move into general education, the greater the savings. And, the greater the savings, the greater the reinvestment opportunity into the preschool program. As more children are served, more money is saved, which in turn allows the school district to serve more preschool children who are at-risk for school failure.

### ***School Readiness and Educational Attainment for At-Risk Children***

The best predictor of high school graduation is reading proficiency by 4<sup>th</sup> grade. According to a recent report by the Annie E. Casey Foundation<sup>7</sup>, children are learning to read through grade 3 and then reading to learn beginning in grade 4. If a child is not reading on grade level by third grade, he or she will have a difficult time keeping up in later grades. Studies show that one of the most important predictors of third-grade test



performance is school readiness at kindergarten entry.<sup>8</sup> Research shows that high quality preschool programs can improve the school readiness and educational achievement for at-risk children.

High quality preschool has been shown to increase reading proficiency in the elementary grades for economically disadvantaged children. By increasing funds available to these programs and, therefore, increasing access and participation among low-income children, school districts should make progress in closing achievement gaps and in attaining reading proficiency for its low-income students by 3<sup>rd</sup> grade.

The sustainable financing model would allow school districts to fund increased access to high quality preschool for children who are at-risk for school failure. The model would also promote increases in quality in preschool programs. In order to realize savings, school districts would have an incentive to invest in quality. Research shows that the greatest gains (and, therefore, savings) with respect to reductions in special education usage and academic achievement are achieved by high quality preschool programs. High quality early childhood programs have low child-teacher ratios, evidenced-based curriculums, and highly qualified teachers, with training in early childhood development.

### **Demonstration of the Sustainable Financing Model: Granite School District in Salt Lake City**

The Granite District Preschool Program is a comprehensive, high quality, and effective educational program serving nearly 3,000 students per year in regular education and special education settings in 45 schools across the Salt Lake Valley. Of these schools, 25 are identified as eligible for Title I based on the rates of Free and Reduced Lunch (FRL) eligibility. The 15 of these schools most impacted by poverty receive Title I funding to help these children in preschool through the 6<sup>th</sup> grade achieve academic success.

***The Granite Preschool Program was designated a “Center of Excellence” by the U.S. Department of Education in the first year of implementation of an Early Reading First Grant.*** Three and four year old children attending preschool are provided with a full range of age-appropriate instruction across domains including all areas of early literacy, numeracy, social-emotional, physical, and cognitive growth. Each classroom educates approximately 18 students with two full-time instructional staff, for an adult to child ratio of 9 to 1. The Granite Preschool Program uses the *We Can! Early Childhood Curriculum*. Teachers receive monthly professional development and mentoring and staff uses data to inform instruction. Additional support is provided by special education consultants, speech-language pathologists, and other service providers who provide specialized instruction for children with disabilities as well as other children with special needs. The current funding is a combination of Title I, special education, tuition, registration fees, and grant monies. Tuition at all schools is on a sliding fee scale, and at Title I schools scholarships are also available for families who cannot afford to send their young children to preschool.

### **Longitudinal Data Analysis**

Longitudinal data was collected, beginning with SY06-07, for 3 cohorts of at-risk preschoolers in 11 of the Title I school most impacted by poverty.

- 74% of all students in all of the 11 Title I schools most impacted by poverty were eligible for FRL in SY07-08 and 78% in SY08-09.
- Over 80% of all students were eligible for FRL in SY07-08 in 3 of the 11 schools.

- Over 80% of all students were eligible for FRL in SY08-09 in 7 of the 11 schools.

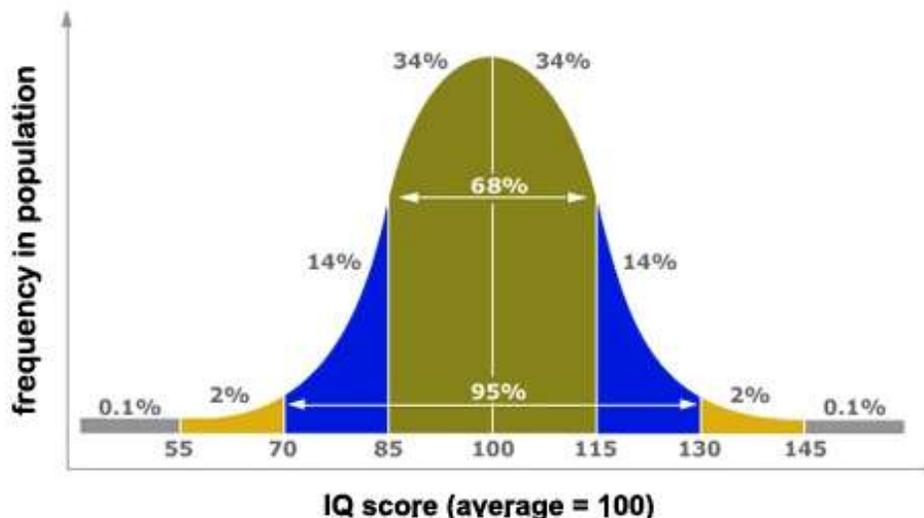
The 3 cohorts of children in the 11 most impacted Title I schools took the Peabody Picture Vocabulary Test (PPVT), primarily at the beginning of preschool at 4 years old ( a few took the test later in the year). The PPVT is a nonverbal, multiple choice test designed to assess the receptive knowledge of vocabulary of children. The test is individually administered and norm-referenced. The size of the cohorts were:

- SY06-07 Preschool Cohort: 213 children
- SY07-08 Preschool Cohort: 245 children
- SY08-09 Preschool Cohort: 279 children

For all three cohorts, 40 percent of the children attended 2 years of preschool and 60 percent attended for one year. Three year olds attend preschool for a half day, two days a week. Four year olds attend for a half day, four days a week. Only children who attended preschool for 5 out of 9 months were included in the cohorts.

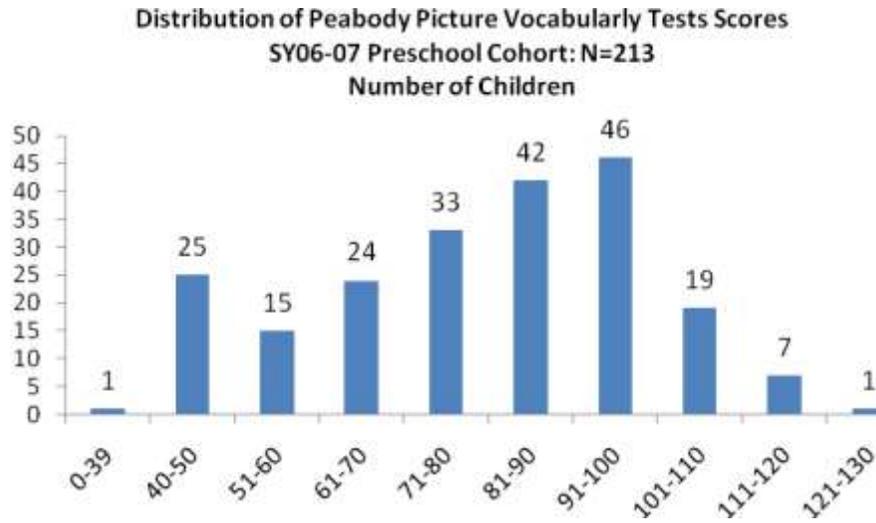
While standard test scores on the PPVT is just one measure used to determine special education eligibility, it is an important one. For typically developing children, the normal distribution of standard scores is shown in the graph below. Cutoff scores of 1.5 and 2 standard deviations below the mean are commonly used benchmarks in language delay diagnosis. A standard score of 70 is 2 standard deviations below the mean. Without intervention, children with test score of 2 standard deviations or more below the mean would most likely continue to score 2 standard deviations or more below the mean at school entry and would potentially be eligible for special education services.

### Normal Distribution of Standard Scores for Typically Developing Children

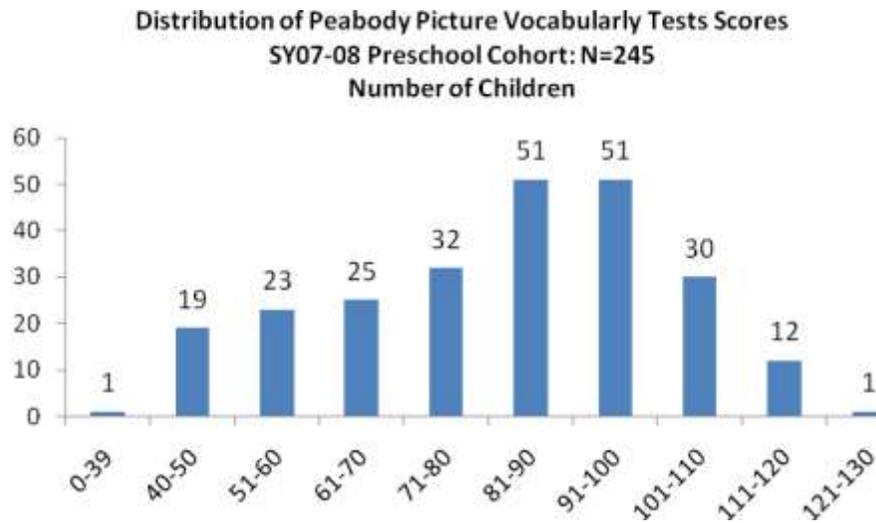


Cutoff scores as an indicator of eligibility for special education varies by state and school district. While students scoring below 75 could be potentially eligible for special education in the Granite School District, only students with standard test scores of 70 and below (2 standard deviation or more below the mean) were determined to be eligible for special education for this analysis.

For the SY06-07 preschool cohort, PPVT assessments were administered to a total of 213 children, and 65 (30%) of the children scored 70 or below and were potentially eligible for special education.

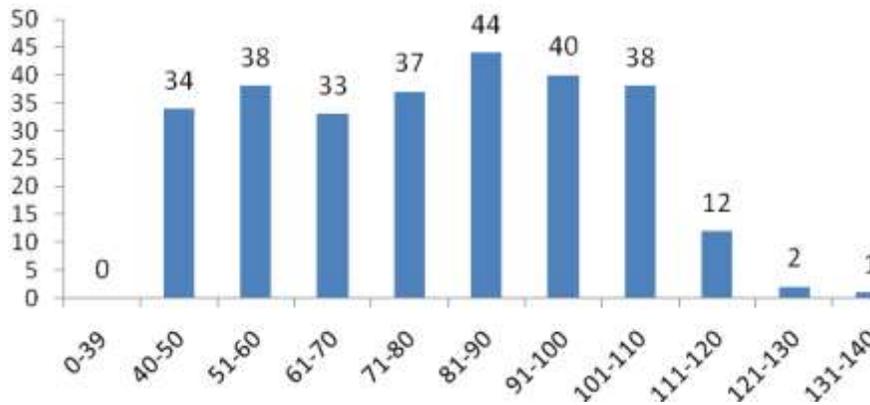


For the SY07-08 preschool cohort, PPVT assessments were administered to a total of 245 children, and 68 (28%) scored 70 or below.



For the SY08-09 preschool cohort, a total of 279 preschoolers took the PPVT, 105 (38%) scored 70 or below.

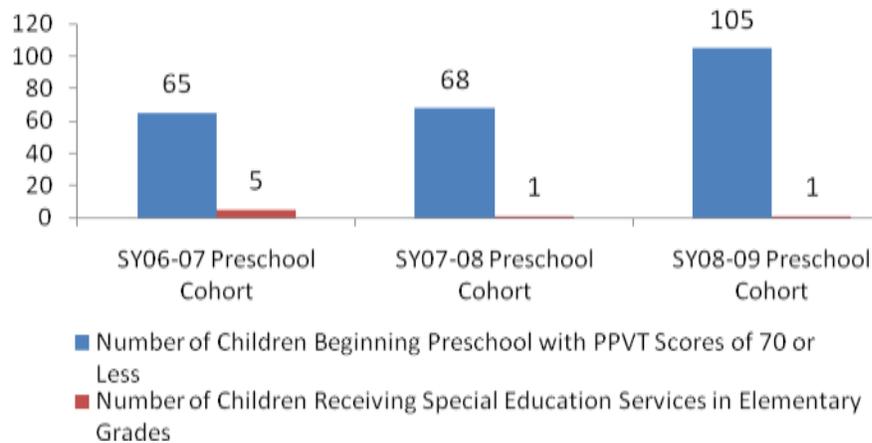
**Distribution of Peabody Picture Vocabulary Tests Scores  
SY08-09 Preschool Cohort: N=279  
Number of Children**



Over the three years, 238 preschoolers who were tested scored 2 or more standard deviations below the mean. However, after attending Granite’s high quality regular education Title I preschool, only 7 were referred to special education in elementary school.

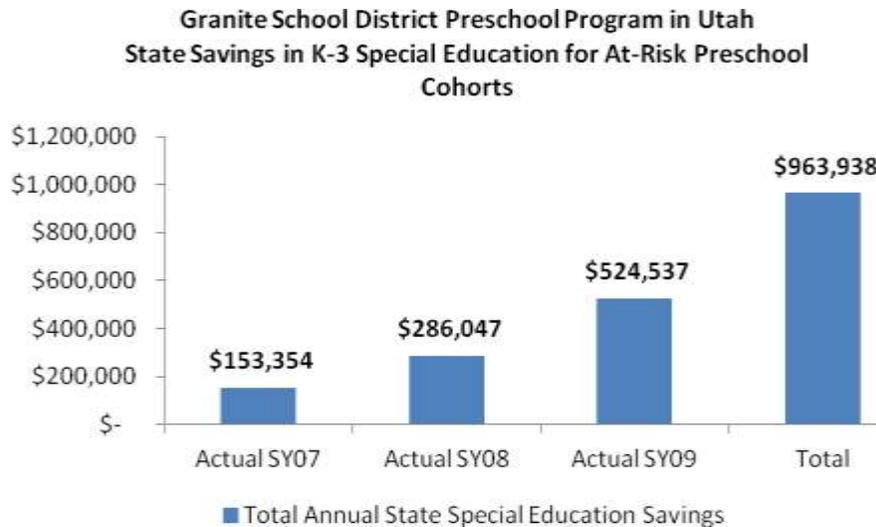
- Of the 30% (65) of the SY06-07 cohort of 213 at-risk preschoolers with PPVT scores of 70 and below and who were potentially eligible for special education, **only 5 received special education services k-3.**
- Of the 28% (68) of SY07-08 cohort of 245 at-risk preschoolers with PPVT scores of 70 and below and who were potentially eligible for special education, **only 1 received special education services k-2.**
- Of the 38% (105) of SY08-09 cohort of 279 at-risk preschoolers with PPVT score of 70 and below and who were potentially eligible for special education, **only 1 received special education services k-1.**

**Number of Children Receiving Special Education Services in  
Elementary Grades**

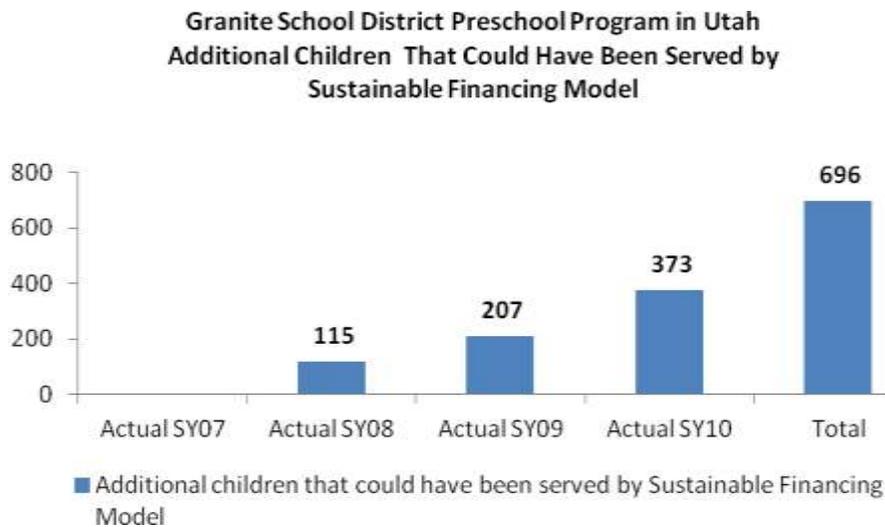


## The Sustainable Financing Model

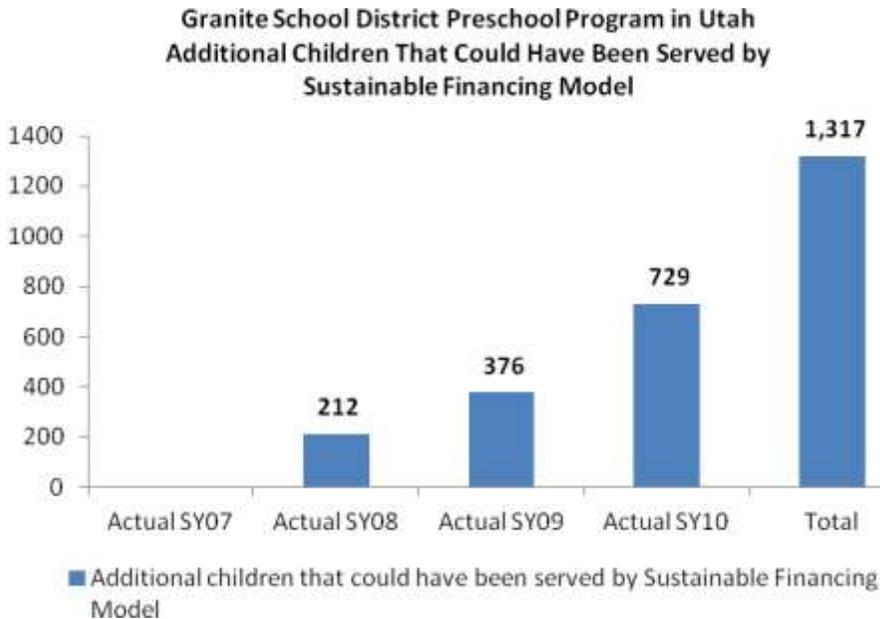
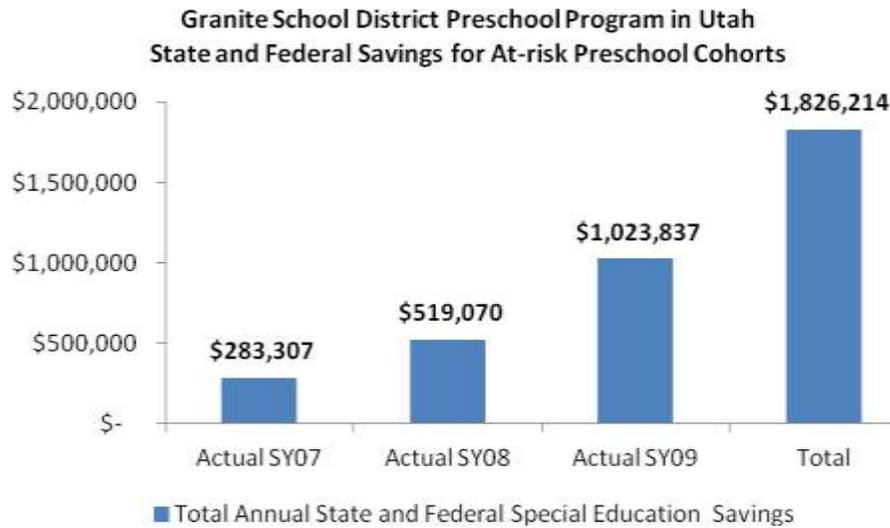
Utah funds special education through an average weighted per pupil (WPU) add-on for special education (this does not include the self-contained add-on for severely disabled children). Since children who are referred to special education are rarely declassified, the annual cost savings is the WPU add-on per child for every child who scored below 70, but who did not require special education services in the elementary grades, multiplied by the number of children. The total amount of state cost savings in special education associated with the 3 cohorts of preschoolers over the 3 year period from SY07 through SY09 was \$963,938.



An additional 696 children over 3 years could have been served had the state cost savings been reinvested into the preschool program to serve more at-risk children.



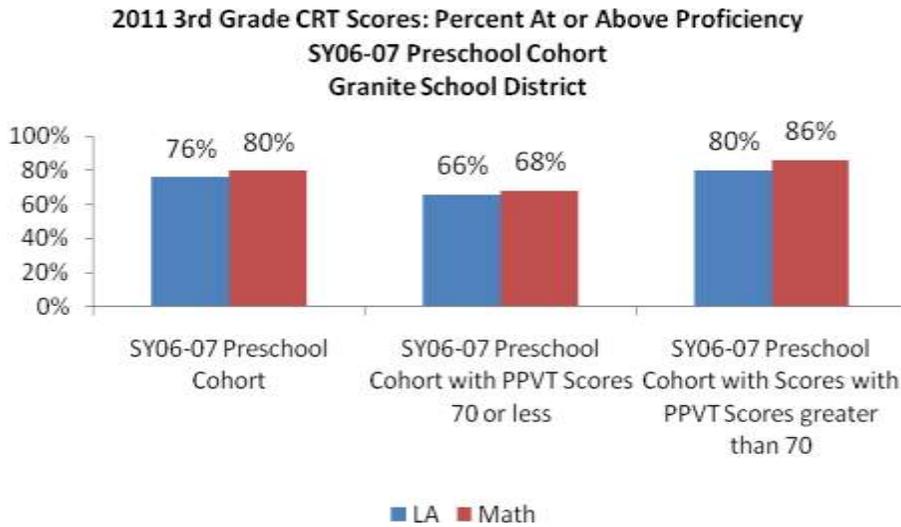
The reduction in special education use for the 3 cohorts of children is also a federal cost savings under the Individual with Disabilities Education Act (IDEA) funding stream. \$1.8 million in state and federal cost savings have been achieved and an additional 1,317 children could have been served by the Sustainable Financing Model, if both state and federal savings had been reinvested into the preschool program to serve more at-risk children.



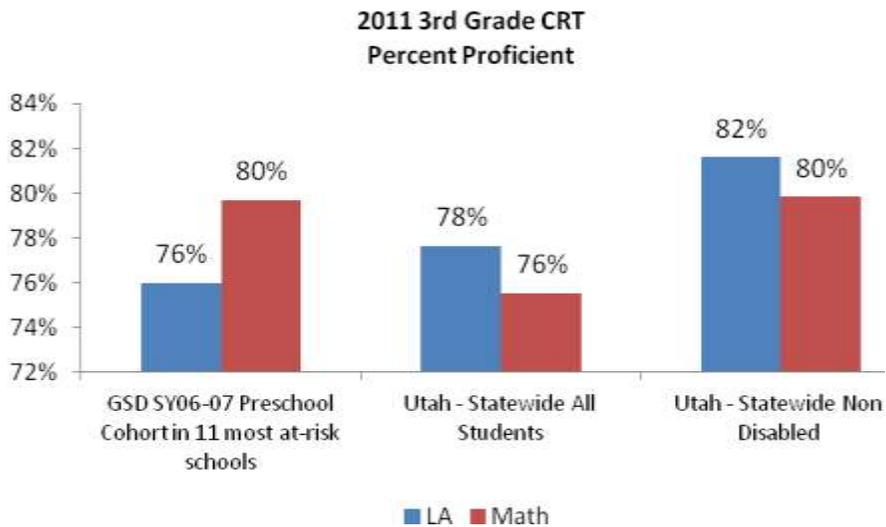
### Academic Achievement

Longitudinal academic achievement data was available for the SY06-07 preschool cohort included in the previous analysis. Of the 213 original cohort in the 11 schools most impacted by poverty, 133 remained in the Granite School District in 3<sup>rd</sup> grade during SY2010-2011 (excluding special education students). In 2011, 76 percent of the

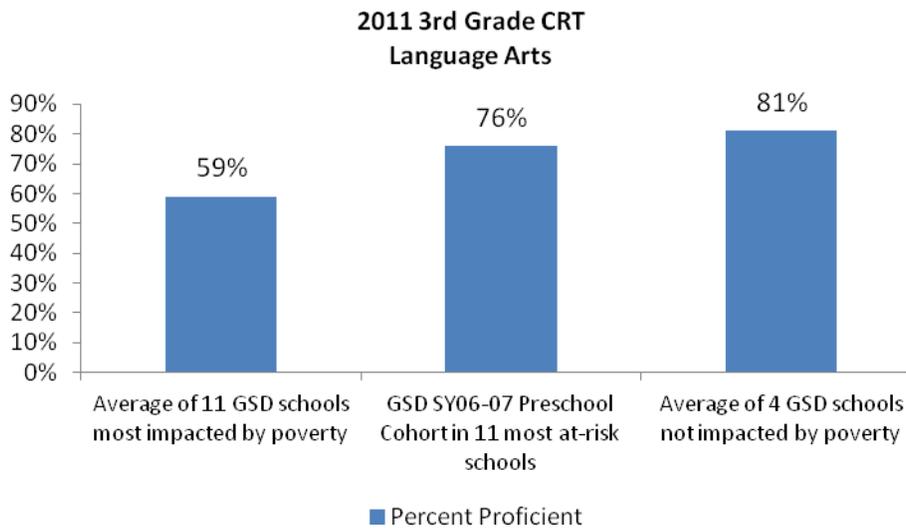
3<sup>rd</sup> grade students from the SY06-07 preschool cohort were at or above proficiency in Language Arts and 80 percent were proficient in Math. 66 percent of the SY06-07 preschool cohort with PPVT scores less than 70 in preschool were at or above proficiency in LA and 68 at or above proficiency in Math. 80 percent of the SY06-07 preschoolers who had PPVT scores greater than 70 were at or above proficiency in LA and 86 percent were at or above proficiency in Math.



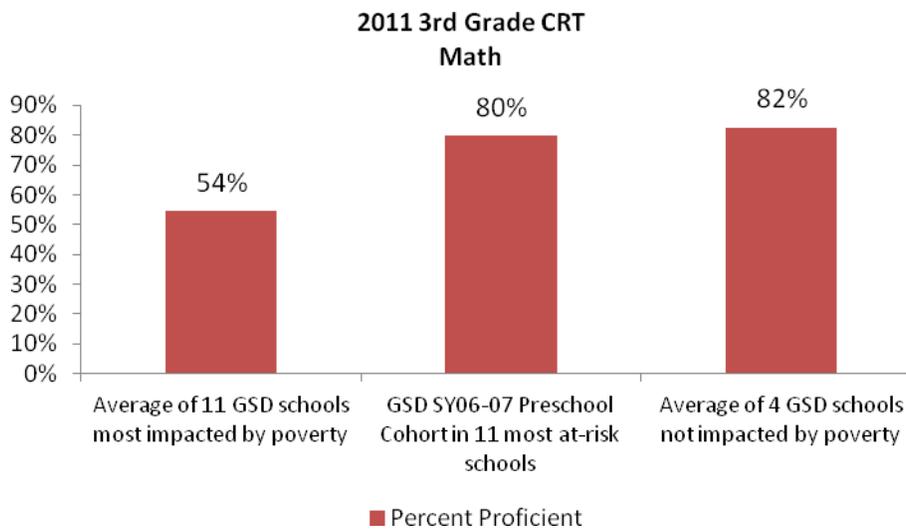
The SY06-07 cohort of at-risk children scored similarly in Language Arts (LA) as all children in the state and outperformed all children in the state in Math. When compared to children without disabilities statewide, the difference was 6 percentage points in LA and the achievement gap in Math was eliminated.



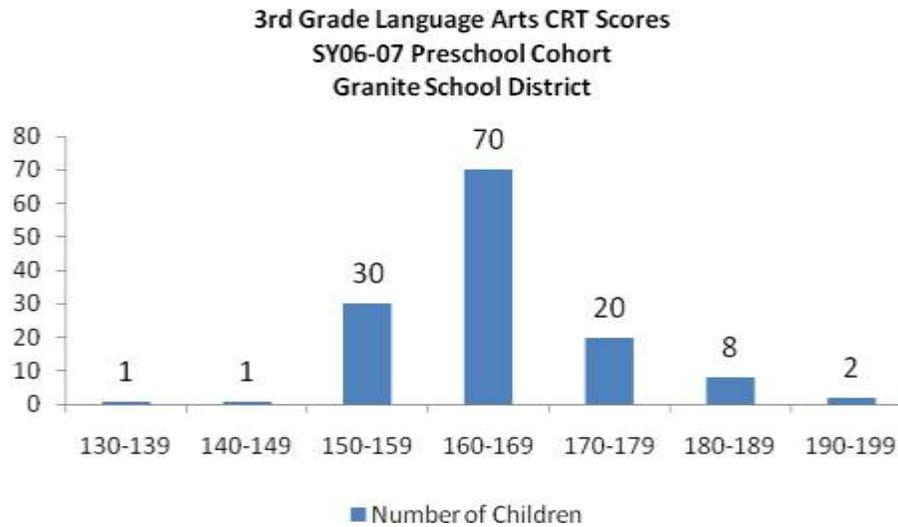
The achievement gap between 3<sup>rd</sup> grade students in the 4 schools least impacted by poverty (28% of students eligible for free and reduced lunch) in the district and the 11 schools most impacted by poverty (80% of students eligible for free and reduced lunch) in Language Arts (LA) was reduced from 22 percentage points to 5 points.



The achievement gap in Math was reduced from 23 percentage points to 2 points.



Examination of the distribution of the CRT scores for the SY06-07 preschool cohort reveals a more normal distribution, with a slight bias to the higher scores than the distribution of the PPVT scores of the same cohort on page 8. A score of 160 and above is considered at or above grade level and proficient. Further analysis is recommended to determine the significance with respect to grade level performance of scores between 150 and 159.

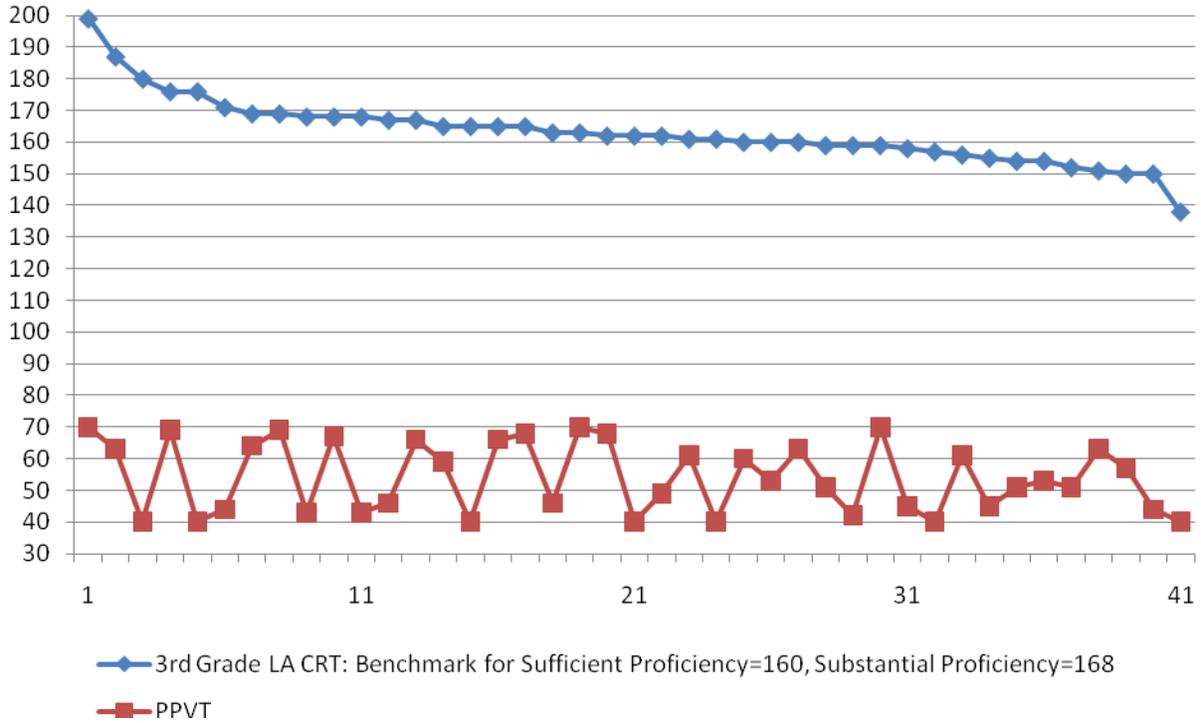


The academic performance in 3<sup>rd</sup> grade of the SY06-07 preschool cohort with PPVT scores of 70 or less is equally impressive when considering that 72 percent of these children had non-English (primarily Spanish) speaking parents. In 2011, 60 percent of Hispanic 3<sup>rd</sup> graders statewide were proficient in LA and 54 percent were proficient in Math. Only 42 percent of English Language Learners (ELL) statewide were proficient in LA and 35 percent were proficient in Math.

In addition, the mean PPVT score of these children as 4 year olds entering preschool was 55, 3 standard deviations (and 45 points) below the mean for typically developing children, with all of these children potentially eligible for special education services. Not only did these children not require special education, but they outperformed the average of all the children in the 11 most at-risk schools. And, the mean 2011 3<sup>rd</sup> grade LA CRT score for this group is 163.2, less than 2 points below the estimated mean of all students in the Granite School District of approximately 165.

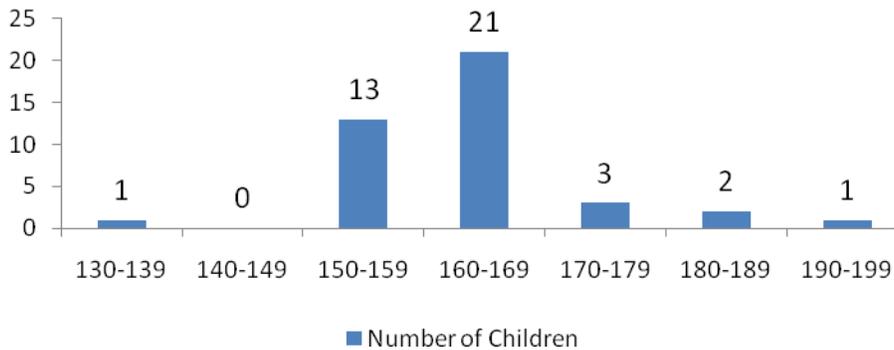
The following graph shows the PPVT and CRT scores for the SY06-07 preschool cohort with PPVT scores of 70 or less. 41 children of the original 65 who scored 70 or below were still in the school district in 3<sup>rd</sup> grade.

**3rd Grade Language Arts CRT Scores  
SY06-07 Preschool Cohort with PPVT Scores 70 and Below  
Granite School District**



Twenty-seven of the 41 scored at or above proficiency, while 14 scored below. Thirteen students scored between 150 and 159, and 7 scored between 155 and 159.

**3rd Grade Language Arts CRT Scores  
SY06-07 Preschool Cohort with PPVT Scores 70 and Below  
Granite School District**



## Conclusion

The academic and special education outcomes associated with the 3 cohorts of at-risk children included in this study are encouraging. The results support an expansion of the research, with respect to both scope and research design. The next step to implementing this model might entail a randomized controlled experiment to verify the early results and expand the study to include larger cohorts of at-risk children within the Granite School District. In addition, federal advocacy to allow the inclusion of the reinvested savings in the calculation of the Maintenance of Effort requirement under IDEA may be necessary to fully implement this financing model. Depending on each state's special education funding law, enabling legislation at the state level may also be necessary to allow school districts to redirect the state funded savings from reduced special education usage to the preschool program.

## Acknowledgements

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## Endnotes

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- <sup>1</sup> "In Brief: The Science of Early Childhood Development," Center for the Developing Child, Harvard University.
  - <sup>2</sup> "The Promise of Preschool for Narrowing Readiness and Achievement Gaps Among California Children," Research Brief, The Rand Corporation, 2007.
  - <sup>3</sup> "The High Scope Perry Preschool Study Through Age 40: Summary, Conclusions and Frequently Asked Questions," Lawrence J. Schweinhart, High Scope Educational Research Foundation, 2005; "Exceptional Returns: Economic, Fiscal and Social Benefits of Investment in Early Childhood Development," Robert G. Lynch, Economic Policy Institute, 2004; "Age 21 Cost-Benefit Analysis of the Title I Chicago Child-Parent Center Program: Executive Summary," Arthur J. Reynolds, et al., June 2001.
  - <sup>4</sup> "LA 4 Longitudinal Report:", Center for Child Development,
  - <sup>5</sup> [www.ideadata.org](http://www.ideadata.org)
  - <sup>6</sup> "Predictors of Change in Eligibility Status Among Preschoolers in Special Education," Tamara C. Daley, Elaine Carlson, *Exceptional Children*, Vol. 75, No. 4, pp.412-426, 2009.
  - <sup>7</sup> "Early Warning! Why Reading by the End of Third Grade Matters," Annie E. Casey Foundation, 2010.
  - <sup>8</sup> The Parents as Teachers Program and School Success: A Replication and Extension," Edward Zigler, Judy Pfannenstiel, *The Journal of Primary Prevention*, Volume 29, Issue 2, March 2008, pages 103-120.