

Evaluation of More at Four State Pre-Kindergarten

THE FIRST TEN YEARS

SUMMARY

- Ten years of evaluations have shown More at Four to be a highly rigorous pre-kindergarten program that successfully targets low-income household children and those at-risk of later academic failure.
- Quality in the classroom is high. The percentage of teachers with a BA degree and a Birth-Kindergarten license is above 80% in public school settings, and has doubled to around 30% in community settings.
- Learning growth for all students is significant and above expectations for those children starting with the lowest knowledge base. Rates of learning growth in pre-K are generally sustained through the end of kindergarten.
- The most recent evaluation shows that on third grade reading and math tests, ex-More at Four children who received a free or reduced lunch in third grade some four years after leaving a More at Four classroom, performed significantly better than children who received a free or reduced lunch but who didn't attend More at Four.
- These 3rd grade EOG results show that More at Four narrowed the achievement gap by up to 40% at third grade.

A CLOSELY EVALUATED EDUCATION INITIATIVE

Since its first full year in 2002-03, More at Four has been closely scrutinized by independent researchers at the Frank Porter Graham Child Development Institute at UNC-Chapel Hill. These evaluations show that quality in the More at Four classroom is high, that this classroom quality is associated with high rates of learning growth, that children at most-risk of academic failure exhibit the highest rates of learning growth in More at Four, and, that four years later, children who were in More at Four and who receive a free or reduced lunch in third grade, did significantly better in EOG reading and math tests than free or reduced price lunch children who did not attend More at Four.

SERVING CHILDREN IN NEED

More at Four has maintained a consistent focus on servicing the needs of disadvantaged children since its inception. Since year one, three-quarters of the children served in More at Four have come from households below 130% of the federal poverty level (i.e. eligible for a free lunch) and the majority have never been previously served by an early education or care provider (figure 1). Around 9 in 10 children in any one year are eligible for a free or reduced price lunch.ⁱ The share of children with a chronic health problem or identified disability has held steady at around 5% or 6% while those with a developmental need has increased over the decade, from around 10% in 2001-02 to over 30% in 2009-2010 (figure 2).

Figure 1: Percent of More at Four Children in Poverty, Never Served, 2002-2010

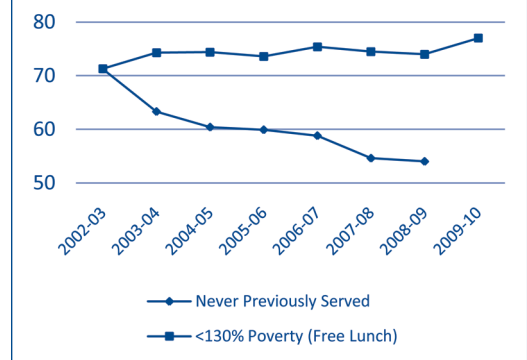
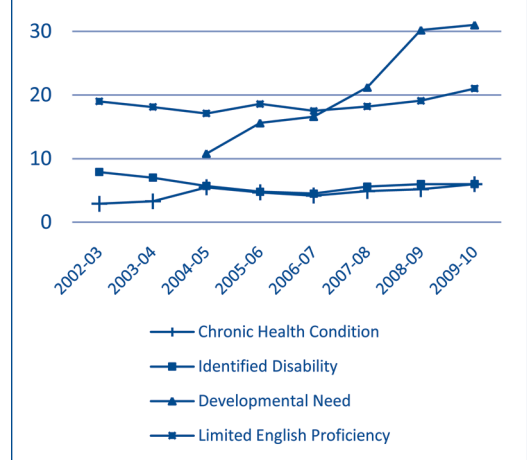


Figure 2: Percent of Special Needs Children in More at Four, 2002-2010



EVALUATION HIGHLIGHTS, 2002-2010

The evaluations of More at Four have been of four types: measurements of the quality of the learning environment, tracking of the learning gains of cohorts of children in pre-k and kindergarten, and finally, following More at Four students through third grade and comparing their EOG third grade reading and math scores with that of children who did not attend More at Four.

High Quality Pre-Kindergarten

“More at Four maintained relatively high quality over time, even as the program expanded substantially.”ⁱⁱ

The percentage of highly qualified teachers in More at Four classrooms is high and growing, especially in community settings in recent years. Over 80% of public school More at Four teachers have a bachelors degree with either a Birth-kindergarten license or equivalent. The prevalence of highly qualified teachers in community setting classrooms has doubled since the early years of the program.ⁱⁱⁱ

Having highly qualified teachers matters: multiple evaluations have shown that more frequent literacy and language instruction is associated with classrooms where the teacher has a BK license. When this instruction is high quality, children show greater growth in print knowledge, print and story concepts and social skills.^{iv}

The promotion of highly qualified teachers in More at Four is maximizing the likelihood that key literacy and social skills will be learned at an accelerated rate; skills that have been identified as critical to early child development.^v

Exceptional Learning Growth

“[C]hildren at greatest risk...exhibited greater growth over time in...language and literacy skills (receptive language, letter naming), math skills (applied problems, counting) and general knowledge (social awareness, color).”^{vi}

The challenge to accelerate learning for some children is pressing: without quality pre-kindergarten, children from disadvantaged backgrounds or with limited English arrive in kindergarten with a life-changing literacy and English vocabulary deficit compared to middle-class children.^{vii}

More at Four classrooms have proven themselves in multiple evaluations to sustain learning growth above and beyond average developmental expectations for all participant children across literacy and language, math and social skill domains.^{viii}

Significantly the evaluations conclude that learning gains in pre-K More at Four classrooms have been most pronounced for those in greatest need of accelerated development. The results are particularly strong for receptive language, math and social skills.^{ix}

Such learning gain patterns lead FPG researchers to conclude that More at Four is, “An important and ameliorative experience for children who otherwise may not have such opportunities during the pre-K year.”^x

Growth Sustained through Kindergarten

“[D]uring pre-K, children gained a foundational knowledge, as well as general knowledge and behavioral skills, which prepared them to develop more advanced reading and math skills in elementary school... [T]he benefits of participating in the More at Four Program were maintained through kindergarten.”^{xi}

Three cohorts of More at Four children (2003-04, 2005-06 and 2007-08) have had their progress tracked through the end of kindergarten. These longitudinal studies show that More at Four produced accelerated learning in receptive language, math and social awareness and skills for participant children that persisted through the end of kindergarten.^{xii}

Consistent with the results tracking learning growth through pre-K, children at greatest risk demonstrated steeper learning curves than other More at Four students, and this acceleration was also evident through kindergarten.^{xiii}

Significant Long-term Effects

"[T]hese results represent the effects of the More at Four program above and beyond those of a variety of other types of pre-school experiences. In sum, these findings provide evidence that the More at Four program is helping to lessen the achievement gap for poor children in both math and reading performance, and that such early pre-K experiences can have a lasting effect into the elementary school years."^{xiv}

An evaluation of the performance of More at Four children on third grade reading and math tests compared to non-More at Four children has found that children who were economically-disadvantaged in third grade in 2006-07 or 2007-08 and who attended More at Four for more than 70% of the 2002-03 or 2003-04 school year achieved statistically significant higher third grade math and reading test scores, on average, than economically-disadvantaged children who did not attend More at Four.^{xv}

The third grade economic status achievement gap - that persistent gap in average test scores between economically-disadvantaged and middle class children in 3rd grade reading and math - is closed substantially for economically-disadvantaged children who attended More at Four four years earlier (see figures 3, 4 & 5).^{xvi}

The economic status achievement gap for ex-More at Four children who did not receive a free or reduced lunch at third grade was reduced 68%, 81% and 81% for Reading 2006-07, Reading 2007-08 and Math 2006-08, respectively.

Consistent with these results, further statistical analyses of third grade reading and math scale scores from 2006-07 and 2007-08 show that children who received a free or reduced lunch in third grade were associated with lower test scores but those economically-disadvantaged children who attended a More at Four classroom for more than 70% of the school year four years earlier achieved statistically significant higher scores.

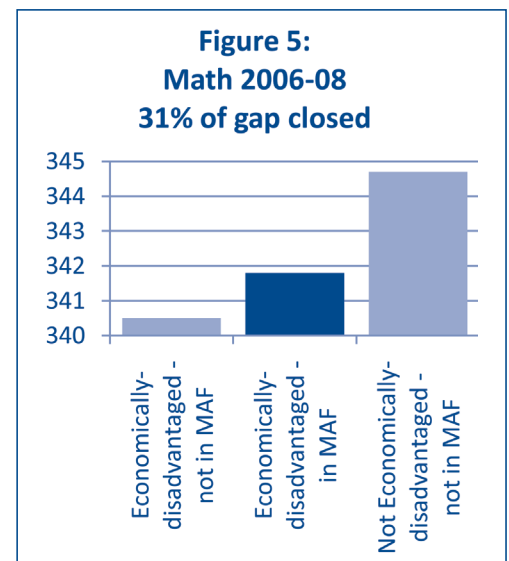
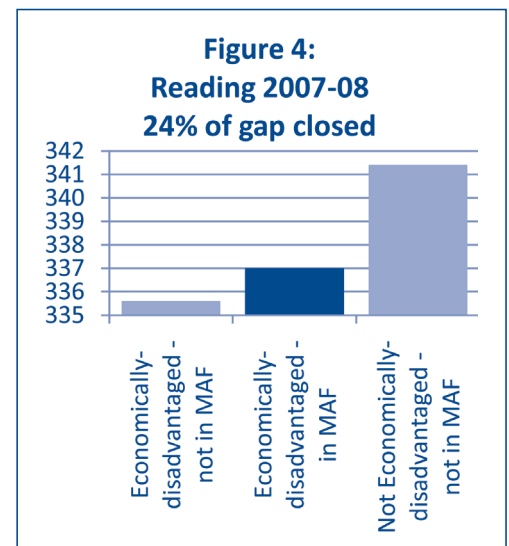
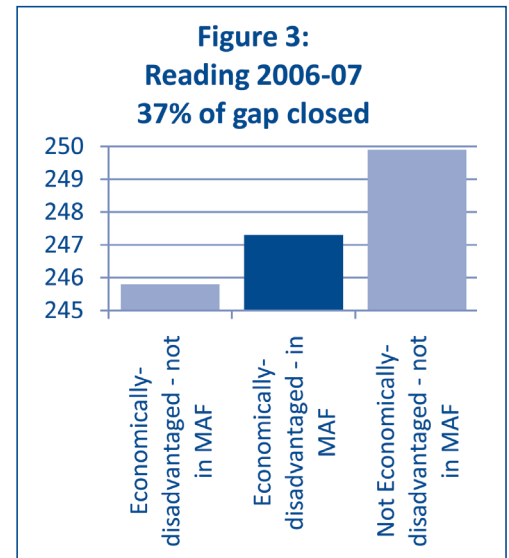
Economically-disadvantaged children in More at Four earn an achievement boost that is evident in third grade compared to all other economically-disadvantaged children. Some of these other children received some kind of early education care or education outside the home. The boost was also achieved within the context of wide variation in K-3 classroom quality.

NEXT STEP FOR THE EVALUATION OF PRE-KINDERGARTEN

The next FPG evaluation of the effectiveness of More at Four will use a rigorous methodology known as a regression discontinuity design to further investigate the effect of More at Four on learning growth.^{xvii} This report is expected to be released in early 2011.

The Office of Early Learning is exploring a randomized assignment or experimental evaluation design for a future More at Four evaluation. Such a study would track the academic performance of children who qualified for More at Four and who were randomly assigned to the program against those eligible students who were not randomly assigned to More at Four. Such a design takes advantage of the current waiting list in many counties caused by an excess of demand for More at Four among children who qualify for the program.

A randomized assignment design evaluation of a state-wide pre-k program has not been conducted in the United States. The Office of Early Learning believes that this kind of evaluation will not only inform continuous improvement of an already high quality and effective state pre-kindergarten in North Carolina but provide policymakers, stakeholders, parents and communities with valuable data that can inform best education practice throughout the United States.



REFERENCES

ⁱ Data for 2009-10 are preliminary estimates.

- ⁱⁱ Peisner-Feinberg & Schaaf (2010a) "Sustainability of State Pre-K Program Effect's on Children's Outcomes in Pre-K and Kindergarten," Poster presented at AERA Annual Meeting, Denver, CO May 10, p. 4.
- ⁱⁱⁱ Schaaf (2010), 2009-10 preliminary data, personal email, 9/2/2010; Peisner-Feinberg (2009) "Summary of Major Findings: 2008-2009 Evaluation of the NC More at Four Pre-kindergarten Program," unpublished manuscript, table 2; Peisner-Feinberg & Schaaf (2008a) *Evaluation of the North Carolina More at Four program: Performance and Progress in the Seventh Year (2007-08)* Chapel Hill, NC: FPG Child Development Institute, table 7; Peisner-Feinberg & Maris (2005a) *Evaluation of the North Carolina More at Four Pre-Kindergarten Program: Year 2 Report (July 1, 2002 – June 30, 2003)*. Chapel Hill, NC: FPG Child Development Institute, table 3.
- ^{iv} Peisner-Feinberg & Schaaf (2008b) *Evaluation of the North Carolina More at Four Pre-Kindergarten Program Year 6 Report (July 1, 2006- June 30, 2007): Children's Longitudinal Outcomes and Program Quality Over Time (2003-2007)*. Chapel Hill, NC: FPG Child Development Institute, pp 51, 82; Peisner-Feinberg & Schaaf (2008a) pp 58, 62-63; Peisner-Feinberg & Maris (2005a), pp 7, 32.
- ^v For instance, see National Research Council and Institute of Medicine (2000) *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Committee on Integrating the Science of Early Childhood Development, Shonkoff & Phillips, eds. Board on Children, Youth & Families, Commission on Behavioral and Social Sciences and Education. Washington DC: National Academy Press, pp 105-123, 133-145, 152-181.
- ^{vi} Peisner-Feinberg (2008b), p 54. Also see Peisner-Feinberg & Maris (2005a) pp 38-39, 41; Peisner-Feinberg & Schaaf (2008a), p. 61.
- ^{vii} Hart & Risley (1995, 2002) *Meaningful Differences in the Everyday Experiences of Young American Children*, Brookes
- ^{viii} Peisner-Feinberg & Marris (2005b) *Evaluation of the North Carolina More at Four Pre-Kindergarten Program: Year 3 report (July 1, 2003 – June 30, 2004)*. Chapel Hill, NC : FPG Child Development Institute, pp 41-42; Peisner-Feinberg (2008b), p 53.
- ^{ix} Peisner-Feinberg (2005a) pp 41-46; Peisner-Feinberg (2005b) pp 44-51; Peisner-Feinberg & Maris (2006) *Evaluation of the North Carolina More at Four program: Children's Longitudinal Outcomes and Classroom Quality in Kindergarten*, Chapel Hill, NC: FPG child Development Institute, pp 15-30; Peisner-Feinberg & Schaaf (2007) *Evaluation of the North Carolina More at Four Pre-Kindergarten Program: Year 5 Report: Children's Outcomes and Program Quality in the Fifth Year*, Chapel Hill, NC:FPG Child Development Institute, pp 38-47; Peisner-Feinberg (2008b) pp 53-5, 60ff; Peisner-Feinberg (2008a) pp 61, 68ff; Peisner-Feinberg (2009) p. 3.
- ^x Peisner-Feinberg & Schaaf (2008b) p 85.
- ^{xi} Peisner-Feinberg (2009) p. 2
- ^{xii} Peisner-Feinberg (2008b) pp 52-53; Peisner-Feinberg (2009) p. 2; Peisner-Feinberg (2010a) pp 7-12;
- ^{xiii} Peisner-Feinberg (2008b), pp 53ff.
- ^{xiv} Peisner-Feinberg, E. & Schaaf, J. (2010b), *Long-term Effects of the North Carolina More at Four Pre-Kindergarten Program: Children's Reading and Math Skills at Third Grade* (Chapel Hill, NC: FPG Child Development Institute).p 11
- ^{xv} Peisner-Feinberg, E. & Schaaf, J. (2010b), tables, 5, 6, 7, 8, 9, 10, 11, & 12.
- ^{xvi} All scale scores are adjusted 3rd grade test means for years indicated; 'economically-disadvantaged' means receive free or reduced price lunch in third grade; math results are for two cohorts, 2006-07 and 2007-08.
- ^{xvii} Regression discontinuity design or RDD has recently joined random assignment or experimental design as the most rigorous evaluative methodology according to the *What Works Clearinghouse* at the US Department of Education. See http://ies.ed.gov/ncee/wwc/pdf/wwc_rd.pdf