

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)



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Executive Summary

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EXECUTIVE SUMMARY

OVERVIEW OF THE MORE AT FOUR PROGRAM

The North Carolina More at Four Pre-kindergarten Program, a state-funded initiative for at-risk 4-year-olds, is designed to help children be more successful when they enter school through provision of a classroom-based educational program during the year prior to kindergarten. More at Four began in 2001-2002, and provides funding for pre-k classrooms at a variety of different types of sites, including public schools, Head Start, and community child care centers (both for-profit and nonprofit). The programs operate on a school calendar and school-day basis, and individual classrooms may serve More at Four children exclusively or may be blended classrooms including children served through other sources. Local sites are expected to meet a variety of program guidelines and standards around curriculum, training and education levels for teachers and administrators, class size and student-teacher ratios, North Carolina child care licensing levels, and provision of other program services. Children are eligible for More at Four based on family income (up to 75% of state median income or up to 300% of Federal poverty status) and other risk factors (limited English proficiency, identified disability, chronic health condition, and developmental/educational need). The program first targets “unserved” children (those not already being served in a preschool program) and secondly, “underserved” children (those in a program but not receiving child care subsidies and/or those in lower quality settings). More at Four has served over 69,000 children during the first six program years (2002-2007).

STATEWIDE EVALUATION

The current report contains results from the sixth year of a statewide evaluation of the More at Four Pre-k Program examining program quality and children’s longitudinal outcomes. Two cohorts of children were followed over the pre-k and kindergarten years. Cohort 1 attended More at Four in 2003-2004 and kindergarten in 2004-2005; Cohort 2 attended More at Four in 2005-2006 and kindergarten in 2006-2007. The goal of this study was to provide information regarding the longer-term effectiveness of the program on children’s readiness for and success in school.

The primary research questions addressed by this evaluation included:

- What were the key characteristics of the local More at Four programs and to what extent have they changed over time?
- What was the quality of the More at Four pre-k and kindergarten programs attended by children?
- What were the longitudinal outcomes from pre-k through kindergarten for children who attended the More at Four Program?
- What factors were associated with better outcomes for children?

In order to address these questions, we gathered information from three sources: 1) monthly service reports of program characteristics and the children served from all More at Four sites; 2) observations of the quality of classroom practices in randomly-selected pre-k and kindergarten classrooms; and 3) individual child assessments of children’s growth in language and literacy skills, math skills, general knowledge, and behavioral skills over the pre-k and kindergarten years.

PROGRAM CHARACTERISTICS

Information about the characteristics of the More at Four Program, including the local sites, the classrooms, and the children served was examined for the four most recent years of program operation, from 2003-2004 through 2006-2007. While the size of the program has almost doubled during this time, from 10,891 in 2003-2004 (year 3) to 20,468 in 2006-2007 (year 6), most characteristics of the local More at Four sites have remained fairly similar.

The median class size was 18 each year, with a high proportion (two-thirds or more) of those children participating in More at Four. Nearly half of the children were served in public school sites each year and one-quarter to one-third in private for-profit child care settings, with smaller proportions in private nonprofit child care settings and Head Start.

The More at Four program has continued to serve an at-risk and high service priority status population of children, as intended. Almost one-fifth of the children served spoke limited or no English at entry into the program. The children served are primarily from low-income families, with three-quarters of the children eligible for free lunch (i.e., at or below 130% of poverty). The majority of children (76% or more) each year were “unserved” in a preschool program at the time of enrollment, the targeted service priority group.

One area that has shown some positive change over this period is teacher qualifications, with an increasing number of teachers meeting the program guideline requiring a B-K license (or the equivalent) within four years (from 39% to 53%), although this increase is primarily attributable to public school settings. Simultaneously, across all settings, the percentage of teachers with no credential has decreased (from 34% to 17%).

CLASSROOM QUALITY

Observations of classroom quality were conducted in two randomly-selected samples of More at Four pre-k classrooms and the kindergarten classrooms attended by these children in the subsequent year. The pre-k samples included classrooms operating in 2003-2004 (n=99) and 2005-2006 (n=57), and the kindergarten classrooms included samples operating in 2004-2005 (n=97) and 2006-2007 (n=96).

The quality of classroom practices, using the ECERS-R (Early Childhood Environment Rating Scale-Revised), was measured in both the More at Four pre-k classrooms and the kindergarten classrooms attended subsequently by these children for both cohorts. Across both cohorts, quality was significantly higher in the pre-k classrooms than the kindergarten classrooms. However, there were also some decreases in quality from the first to the second cohort for both the pre-k and kindergarten classrooms. The average ECERS-R score decreased from 5.3 to 4.2 from the 2003-2004 pre-k sample to the 2005-2006 pre-k sample. It will be important to continue to examine this over time to determine whether or not it is an indication of reduced quality in conjunction with continued scaling up of the program. A similar decline was found in the quality of kindergarten classroom practices, from an average ECERS-R score of 3.2 to 2.8 from the 2004-2005 kindergarten sample to the 2006-2007 kindergarten sample. Given that the statewide kindergarten program has been in existence for decades and there were no substantial program changes during that time that would be likely to lead to such a difference, this decline may suggest some evidence of a difference in the samples for the two cohorts that is reflected in both pre-k and kindergarten quality. One factor that was

associated with higher quality classroom practices in both pre-k and kindergarten was smaller class sizes.

A second aspect of classroom quality, observations of the quality of the literacy environment, was measured for the second cohort using the ELLCO (Early Language and Literacy Classroom Observation). Pre-k classrooms tended to have higher quality literacy environments than kindergarten classrooms, although there were no differences in the frequency of literacy activities. The pre-k classrooms did a somewhat better job of setting up a literacy-rich environment than actually carrying out literacy-related activities, while the reverse was true for the kindergarten classrooms attended subsequently by these children. Further, teachers with B-K licenses (or the equivalent) had classrooms with higher quality literacy environments in both pre-k and kindergarten.

A third aspect of classroom quality, observations of the quality of teacher-child interactions, was examined for both pre-k and kindergarten classrooms in the second cohort using the CIS (Caregiver Interaction Scale). Teacher-child interactions in pre-k classrooms tended to be more sensitive than those in kindergarten classrooms. Neither class size nor teacher qualifications were related to the sensitivity of teacher-child interactions in either pre-k or kindergarten.

Two unique characteristics (compared to pre-k) that were measured for kindergarten classrooms were the use of instructional practices designed for elementary school settings and the use of specials. The scores for instructional practices in kindergarten were generally in the medium range, indicating that they were slightly above the minimal implementation of developmentally appropriate practices but were still well below the good range. All of the classrooms observed utilized specials, with an average of nearly 5 per week for an average of nearly 3 hours per week. There was little association between use of specials and observed classroom quality scores, suggesting that specials are not substituting for similar activities in the classroom nor are regular activities within the classroom being enhanced in the absence of specials. Although we were not able to systematically observe the quality of specials, they clearly provide additional opportunities for children's skill development in particular areas.

CHILD OUTCOMES

In order to address questions about the longitudinal outcomes for children attending More at Four and factors associated with better outcomes, individual child assessments were conducted near the beginning and end of children's pre-k and kindergarten years. The sample was comprised of two cohorts of children, with the first cohort including children who attended the More at Four Program in 2003-2004 (n= 514) and then were followed into kindergarten in 2004-2005 (n=348) and the second cohort including children who attended the More at Four Program in 2005-2006 (n=478) and then were followed into kindergarten in 2006-2007 (n=400). Children's language and literacy skills, math skills, general knowledge, and social skills were examined to provide information about the extent to which participation in the pre-k program was associated with sustained patterns of growth through kindergarten, after adjusting for other relevant factors (e.g., children's age at entry, attendance, gender, risk level, English proficiency level, and classroom quality).

Changes over Time in Child Outcomes

Children made substantial gains during both the pre-k and the kindergarten years, across all domains: Language and literacy skills (receptive language, rhyming, story concepts, letter naming), math skills (applied problems, counting), general knowledge (social awareness, color knowledge),

and behavioral skills (social skills). For some of these skills with age-standardized measures (receptive language, applied math problems, social skills), their scores indicated that children progressed at an even greater rate than would be expected for normal developmental growth. The one area that showed no changes was problem behaviors, which remained just below the average expected score for children in these age ranges (i.e., slightly fewer problem behaviors than expected). While children made significant progress each year, for many of these skills they exhibited greater gains in pre-k than kindergarten. For a few measures (social awareness and color knowledge), children had mastered these skills by the end of pre-k or beginning of kindergarten. For other measures (receptive language, letter knowledge, social skills), these results suggest that children's earlier experiences in pre-k may have provided an initial exposure to information that offered a more rapid period of growth, which then slowed slightly in kindergarten.

Growth in Developmental Skills for Spanish Subsample

We also examined the growth on both Spanish and English measures for a subsample of Spanish-speaking children. In general, these children exhibited growth on all English skills and most Spanish skills (except receptive language), with similar amounts of gain during pre-k and kindergarten on most measures. For some skills that children master more quickly (story concepts, social awareness, color knowledge), growth in English was related to children's initial skill levels in Spanish at entry into pre-k. In contrast, for some more specific academic skills (letter knowledge, counting), children's growth in English was associated with both initial skill levels and growth rates in Spanish, or for even higher-level skills (phonological awareness) only with growth in the same skill in Spanish. For children who are attempting to learn bilingually, they may first master easier skills in both languages, and then move to learning more difficult tasks during pre-k and kindergarten as they are ready. For simpler tasks, children entering pre-k at a higher level of knowledge in one language are able to more quickly develop skills in a second language. As the tasks become more difficult developmentally, skill growth in the home language becomes a stronger predictor of their growth in a second language. These findings speak to the importance of promoting children's native language skills in conjunction with their growth in English skills. Interestingly, growth in English receptive language was not related to Spanish receptive language skills (either initial level or growth) nor was there significant growth in Spanish receptive language, which may reflect the emphasis on English for all children once they enter the pre-k program and as they continue into kindergarten.

Factors Associated with Differences in Child Outcomes

In general, the More at Four Program had even greater benefits from pre-k through kindergarten for children with greater needs (higher cumulative risk levels or lower English proficiency levels). These children entered More at Four with lower scores and continued to score lower in most language and cognitive skills. However, these children made greater gains from pre-k through kindergarten in many key school readiness and early academic skills (receptive language, letter knowledge, applied math skills, counting, social awareness, color knowledge). Even though these children were entering pre-k at a deficit, they were gaining at a similar or even greater rate, and in some cases, even catching up to other children (e.g., letter knowledge, color knowledge). The one exception was phonological awareness, a higher-order pre-reading skill, where children with higher risk or lower English proficiency gained at a slower rate than their peers.

In contrast, More at Four pre-k classroom quality was not strongly related to children's outcomes over time. While classroom quality is often associated with children's outcomes, the quality of the More at Four classrooms was generally high, reducing the variability among classrooms and

therefore the differences in the effects on children. Further, children had varied experiences in kindergarten unrelated to their experiences in pre-k, which may have made it more difficult to find associations over time.

SUMMARY AND DISCUSSION

In sum, evaluation results continue to indicate that even as the More at Four Program has expanded substantially each year it has maintained the provision of services in accord with the program guidelines. Moreover, the program has continued to serve a high-risk and previously unserved population of children who are likely to benefit from such an intervention. Consistent with program goals and past evaluation findings, as well as other large-scale studies, children exhibited substantial developmental growth from pre-k through kindergarten across multiple skill areas— language/literacy, math, general cognitive knowledge, and social skills. For Spanish-speaking children, growth occurred for skills assessed in both English and Spanish, with higher skill levels and growth in their home language associated with greater growth in skills in English. Children at greatest risk (those with higher cumulative risk levels or lower English proficiency) made similar or even greater gains over time compared to their peers, although they entered the program with lower skill levels and still had not caught up in many areas by the end of kindergarten. Although the quality of the pre-k classrooms was significantly higher than the kindergarten classrooms, most children exhibited continued growth throughout this time period. These results suggest that the pre-k experiences provided in More at Four helped prepare these at-risk children for school and enabled them to continue to progress, often at a greater than expected rate, in kindergarten. Given the implications of the impact of early school success on children’s continued positive trajectories, these findings suggest that experiences such as those provided in the More at Four Program may offer an important and ameliorative experience for children who otherwise may not have such opportunities during the pre-k year.

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For more information about the Evaluation of the North Carolina More at Four Pre-kindergarten Program, visit the website at www.fpg.unc.edu/~mafeval.

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