EVALUATION OF BRIGHT BEGINNINGS:
SUMMARY OF FINDINGS AND RECOMMENDATIONS

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In partnership with Charlotte-Mecklenburg Schools’ (CMS) Pre-kindergarten Program and the CMS Office of Research, Evaluation, and Analytics, the Community Psychology Research Lab at the University of North Carolina at Charlotte evaluated the Bright Beginnings (BB) pre-kindergarten program in three phases. This summary describes findings from each phase of that evaluation.

Approach to the Evaluation

Phase 1: Archival data from CMS for the 2006-2008 cohorts were used to assess the impact of the program on students’ subsequent performance on standardized assessments, including 3rd and 4th grade End of Grade (EOG) tests.

Children screened for enrollment in the 2006-2008 BB and NC Pre-Kindergarten (NC Pre-K) programs were examined. Students enrolled in BB were compared with children in NC Pre-K on the Peabody Picture Vocabulary Test (PPVT), a measure of receptive vocabulary administered in the fall and spring of the pre-kindergarten year. In addition, students in the two programs were compared with children screened and placed on a Waitlist on (1) the Dynamic Indicators of Basic Early Literacy Skills (DIBELS), assessing pre-literacy and oral reading fluency skills, and (2) 3rd and 4th grade EOGs in reading and math.

The 2006-2008 cohorts of the BB program were primarily taught in early childhood centers (18 sites total). Because BB classrooms were since dispersed across roughly 50 elementary schools, a second phase used data from the 2011-2013 BB and NC Pre-K cohorts to examine student results subsequent to this programmatic change (see below). Analyses also explored the degree to which individual and school characteristics predicted student performance.

Phase 2: Archival data from CMS for the 2011-2012 and 2012-2013 BB cohorts were used to assess performance of BB students relative to other children in kindergarten and 1st grade.

Students from BB, NC Pre-K, and other pre-kindergarten experiences (i.e., children screened but placed on a Waitlist, children whose experiences are unknown) in the 2011-2012 and 2012-2013 cohorts were compared on several different standardized measures (i.e., PPVT, MAP, and Reading 3-D) administered during pre-kindergarten, kindergarten (i.e., 2012-2013 cohort), and first grade (i.e., 2011-2012 cohort).
Phase 3: To augment the data collected by CMS, new data were collected specifically for the evaluation, including classroom observations, teacher ratings of child social-emotional functioning, teacher and parent surveys, and a literacy facilitator focus group, to assess implementation of the BB curriculum and its relation to student functioning for children in the 2013-2014 cohort.

A random sample of BB (n=75) and NC Pre-K (n=24) classrooms was observed during the fall and the spring semesters to assess classroom practices and curricular implementation. Observation data were examined in relation to improvements in student verbal ability and social-emotional functioning.

Parents of students in BB were interviewed to assess their experience with the program, and BB teachers completed a survey that assessed their experience with their school and the BB program. Teachers also completed ratings of each child’s social-emotional functioning. In addition, literacy facilitators’ experience with the BB program was assessed using a focus group.

Findings

Phase 1: 2006-2008 Pre-Kindergarten Cohorts

Bright Beginning students started the year with lower scores on tests of verbal ability, gained about the same as other groups, but remained behind their peers at the end of the year. They continued to lag behind their peers on later assessments, including 3rd and 4th grade EOGs.

- In the 2006-2008 BB cohorts, students entering BB scored lower on initial PPVT assessments than NC Pre-K students.
- At the end of the pre-kindergarten year, BB students continued to evidence lower PPVT scores than those in NC Pre-K; the two groups gained approximately the same in PPVT scores from fall to spring.
- DIBELS Oral Reading Fluency scores were consistently lower for BB students from the 2006-2008 cohorts relative to NC Pre-K and Waitlist students.
- Compared to NC Pre-K and Waitlist students, BB students evidenced significantly poorer performance on 3rd and 4th grade EOGs in Reading and Math.

Student performance and gains varied by race and ethnicity, with Black youth lagging behind other youth at 3rd grade.

Significant disparities across race and ethnicity were also found. Black BB youth fell behind other BB youth on 3rd and 4th grade EOGs. Hispanic youth, initially scoring worse than other BB youth on numerous indicators, scored higher than other BB youth on 3rd and 4th grade math EOGs. BB youth designated as ESL scored the same as other BB
youth on 3rd and 4th grade EOG reading, and higher than other BB youth on 3rd and 4th grade math EOGs. White youth scored highest on all available indicators. Boys in BB also scored higher than girls on the 3rd grade math EOGs, but girls scored higher on reading EOGs.

**There was notable variability in the gains and performance of youth across different BB sites.**

Children in different BB sites varied in their functioning, both in their initial scores (i.e., BB screening assessment, fall PPVT), spring PPVT, and later EOGs. This variability indicated a need to assess classroom practices and implementation of the pre-kindergarten curriculum to develop strategies for maximizing outcomes for all students.

**When BB students attended higher-performing elementary schools, they scored better on standardized tests of achievement; however, BB students were more likely to attend lower performing elementary schools.**

Characteristics of the elementary schools BB youth attended (e.g., school proficiency in reading, percentage of children eligible for free and reduced lunch) related significantly to BB students’ subsequent EOG performance. In particular:

- BB youth attending schools in the lowest quartile of reading proficiency scored, on average, 18 to 25 percentile points lower on reading and math EOGs than did BB youth who attended schools in the top performing quartile. This suggests that elementary school characteristics increase performance disparities for BB students and affect their chances for later success in school.
- In addition, BB youth were twice as likely to attend the lowest performing (bottom quartile) elementary schools compared to the highest performing schools. BB youth who were already evidencing higher levels of basic skills (i.e., higher PPVT scores) than other BB students were more likely to enroll in higher performing schools (although this appears to be less true with dispersion of BB from centers into elementary schools). These findings suggest that there are selection factors that increase disparities for BB students and reduce their chances for later success in school.

**Phase 2: 2011-2013 Pre-Kindergarten Cohorts**

**Pre-Kindergarten Findings (2011-2013 cohorts):**

After the Bright Beginnings centers closed and BB classes were distributed among elementary schools, verbal skills of BB students improved during the year but were still below those of their peers at the end of the year, consistent with findings from prior years.
• While BB students scored significantly lower on fall and spring PPVT compared to NC Pre-K students, BB students improved significantly more than NC Pre-K students from fall to spring, though this may be partially explained by the tendency for students scoring lower on the fall PPVT to improve more overall.
  o Hispanic BB students scored significantly lower on fall and spring PPVT compared to those from other ethnicities, but improved more from fall to spring than students of Black, White, and Other ethnic/racial groups. The gains by Hispanic students could also be due, in part, to the tendency for low-scoring students to show greater gains.
  o Black BB students scored significantly higher on fall and spring PPVT compared to students of other ethnicities (2012-13 cohort only).

Kindergarten Findings (2012-13 cohort only):

Reading/Verbal Ability

Across multiple assessments of reading/verbal ability administered in kindergarten, **BB students were proficient on some measures and not others. NC Pre-K students scored better than BB students on most measures.**

• MAP Assessment: NC Pre-K students exceeded national norms on the Reading portion of the MAP in the fall and spring, while BB students did not meet national norms at any point during their kindergarten year (but were just 1 point below the national norm on the fall assessment). NC Pre-K students scored significantly higher than BB students at each time point.

• DIBELS Assessment: Both BB and NC Pre-K students scored significantly higher on the fall DIBELS Composite score during kindergarten compared to other students (i.e., students on waitlist and those with unknown pre-kindergarten experience); NC Pre-K students scored higher than BB students at all three time points. BB students scored above benchmarks on fall, winter, and spring assessments; however, at spring they scored significantly lower than other students (i.e., NC Pre-K, waitlist, and students with unknown pre-kindergarten experience).

• TRC Assessment: At the beginning and end of kindergarten, most BB students scored Proficient or Above on the TRC. At the middle of the year, most scored Below or Far Below Proficient. NC Pre-K and “Other” students (i.e., students with unknown pre-kindergarten experience) were significantly more likely than BB students to score Proficient or Above at all three time points.
Math

- In kindergarten, both BB and NC Pre-K students scored below national norms on the fall, winter, and spring Math MAP assessments. NC Pre-K students scored significantly higher than BB students at each time point.

First Grade Findings (2011-2012 cohort only):

When BB students were followed up into first grade, they continued to be proficient on some measures and not others.

Reading/Verbal Ability

- MAP Assessment: Average MAP Reading scores of students in BB were below the national norms at fall, winter, and spring assessments. In contrast, CMS system-wide 1st grade Reading scores exceeded national norms at each time point. NC Pre-K students scored significantly higher than BB students at each administration.
- DIBELS Assessment: BB and NC Pre-K students maintained an average score above Benchmark on the DIBELS in fall, winter, and spring. NC Pre-K students scored significantly higher than BB students at each time point.
- TRC: At the beginning of 1st grade, most BB students scored Proficient or Above, but by the end of the year, most scored Below or Far Below Proficient. Students from all other groups (NC Pre-K, Waitlist, Other) were more likely than BB students to score Proficient or Above on the spring assessment.

Math

- Average MAP Math scores for BB students were below the national norms at fall, winter, and spring assessments. In contrast, CMS system-wide 1st grade Math scores exceeded national norms in fall and spring. NC Pre-K students scored significantly higher than BB students at each time point.

Phase 3: 2013-2014 Pre-Kindergarten Cohort

Changes in Student Functioning:

Students showed significant gains in social-emotional functioning and modest gains on measures of verbal ability over the year.

Social-Emotional Functioning

- In the fall, BB students scored significantly lower than national norms on positive social-emotional competencies and their development of positive relationships with adults and children. However, they scored better than national norms on behavioral concerns (i.e., fewer problem behaviors). By spring, BB students
significantly improved on all subscales and were rated *more positively* compared to national norms on *all* social-emotional subscales.
- There were no significant differences in gains made between White students and all other groups. Hispanic students and students of other ethnicities (i.e., Asian, multi-racial, and American Indian) improved significantly more than Black students from fall to spring in their positive interactions with adults and other children (*Attachment*).

**Verbal Ability**
- On average, NC Pre-K students performed significantly better on fall and spring PPVT compared to BB students; however, BB students improved significantly more from fall to spring compared to NC Pre-K students.
- Black and White BB students performed significantly better than students of Hispanic and Other ethnicities (i.e., Asian, multi-racial, and American Indian).
- Students of Hispanic and other ethnicities improved significantly more from fall to spring than Black and White students; Hispanic students gained the most of any group.
- Greater improvements among BB students (relative to NC Pre-K), and Hispanic students (relative to students of other ethnicities), may be partially explained by a tendency for students scoring lower on the fall PPVT to improve more overall.

**Classroom Observation Findings:**

**Implementation of the BB curriculum varies, with some strong classrooms, but many showing low implementation of one or more key curricular areas.**

- Substantial variability across classrooms was found via the evaluation’s observation protocol. Using the subset of items that were most sensitive in distinguishing performance across classrooms, about 20% of classrooms demonstrated strong implementation of the curriculum across all areas, but the remainder of the classrooms evidenced lower levels of implementation in one or more areas. Curricular areas with lower levels of implementation across classrooms included *Logic and Reasoning* and *Informal Staff Reading*. Strengthened coaching, using ongoing, data-based feedback, is recommended to improve implementation.
- Classrooms also varied over time in their implementation, with multiple classrooms showing lower levels of implementation at the end of the school year.
- NC Pre-K demonstrated higher levels of implementation than BB classrooms on the following observation scales: *Writing, Logic and Reasoning, Staff Reading, Language and Communication, Staff Warmth, Morning Meeting Quality, RECAP* (i.e., social-emotional) *Skills, and Total Score.*
Students in "high implementation" classrooms gained more on social-emotional development.

- Greater gains in social-emotional functioning were observed in classrooms with higher levels of implementation of Staff Warmth, positive Discipline, and Staff Supported Interactions. This is important because positive social-emotional functioning has been shown to predict later success for students in pre-kindergarten programs.
- Gains in verbal ability (i.e., PPVT scores) during the BB year were no better for children in highly functioning classrooms versus lower functioning classrooms.
- In addition, 2013-2014 observation scores were used as an estimate of how the same teachers functioned in 2012-2013 BB classrooms. Kindergarten DIBELS scores for their 2012-2013 BB students were then examined in relation to the classroom observation scores from 2013-2014. Students from BB classrooms scoring higher on Logic and Reasoning, Discipline, Staff Warmth, and Total Score had significantly higher DIBELS scores in kindergarten.

Parent and Staff Surveys/Focus Groups:

Teachers reported satisfaction with their school climate overall; when teachers reported positive school climate and positive relationships with school administrators, children showed greater social-emotional development in their classrooms.

- Parents of BB students reported having high quality relationships with their child's teacher, and a high level of satisfaction with the program. They also largely reported that their child's academic, behavioral, and social skills had improved since starting BB.
- BB teachers reported moderate to high satisfaction with their work, school environment, literacy facilitators, and parental communication; however, teachers would like more support from the BB program and school administrators and feel that pre-kindergarten deserves more recognition and support. Top challenges noted by teachers included their school climate (e.g., perceived value of pre-kindergarten), expectations and classroom standards, parent involvement and support, and support for children with special needs.
- When teachers reported having more support from their administrators and/or a more positive climate vis a vis their fellow teachers, their students experienced greater gains on social-emotional functioning.
- Literacy facilitators said that they would like more clarity in their role (e.g., guidance and feedback regarding expectations), more school administrator support (e.g., understanding of pre-kindergarten), and greater communication and support from the BB program.
SUMMARY OF EVALUATION FINDINGS AND RECOMMENDATIONS

Overall, the present evaluation demonstrates some modest to moderate gains among children enrolled in BB. Children who were identified as at-risk for not being ready for kindergarten (i.e., screening scores were below their peers on aspects of cognitive, developmental, and/or pre-academic functioning) increased in pre-literacy and language skills and improved in social-emotional functioning. In addition, at the beginning of kindergarten, children who had been in BB the year before largely scored at “Benchmark” or were “Proficient” on standardized assessments (though not on the MAP Reading and Math assessments). For many of these children, however, their pre-literacy and language performance faded by first grade. No data are available regarding the persistence of the social-emotional gains in these students. However, prior research indicates that, even though academic gains fade, social-emotional development predicts adult success more than academic gains.

Also notable is the substantial variability observed in classroom practices and the implementation of the program curriculum. Higher quality classroom instruction was related to greater social-emotional development.

Finally, where students attend school after finishing Bright Beginnings plays a major role in their later academic functioning. For instance, Bright Beginnings students who attended higher performing elementary schools did substantially better on 3rd grade EOGs than those who went into lower performing schools.

The available data suggest that there is value in continuing to support and, as possible, expand Bright Beginnings. They also point to multiple recommendations, including:

- **Improve instruction by strengthening coaching of teachers, using structured observations to guide teachers.** Improved coaching, together with coordinated support from school principals, can improve instructional practices across classrooms and maintain them over time. Research suggests that improvements in classroom quality – even for strong classrooms – can increase child learning. Ultimately, stronger coaching would help ensure that all students consistently have a high quality pre-kindergarten experience.

- **Assess social-emotional development of students early in the year, and provide teachers with feedback regarding each child’s social-emotional functioning.** This information should be used by teachers, with support from coaches, to differentiate their instruction to improve children’s development.

- **Increase the Pre-Kindergarten Program’s capacity to collect/manage data about parents and children in the program.** This will (a) enable the
program to provide teachers and coaches with information to better tailor instruction to the needs of children, and (b) enhance the ongoing evaluation of the program.

➢ **Consider future applied research/evaluation that can shed light on needed instructional improvements and/or the longer-term impact of Bright Beginnings.** Such efforts could include examining: (1) the longer-term impact of BB, enhanced coaching, and/or feedback from social-emotional assessments; (2) children’s social-emotional skills in kindergarten; (3) the predictive power and sensitivity of pre-kindergarten screening data; and (4) BB’s efficacy for children from traditionally-underserved and underrepresented groups.

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