

Links between *Books from Birth* Participation and Second-Grade Reading Performance

Research Brief
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Pathways to Success Partnership | Shelby County Schools | The Urban Child Institute

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Prior findings: Kindergarten entry

This research brief is a follow up to work done two years ago that focused on how children's early experiences with reading were associated with school readiness at kindergarten entry. At that time, families of approximately 400 incoming kindergarten students were surveyed regarding their early family reading habits, including whether they participated¹ in the Shelby County *Books from Birth* (BfB) early literacy program.²

Children who participated in the *Books from Birth* program prior to kindergarten entry had statistically higher kindergarten readiness scores in language (p=.002) and mathematics (p=.04) than children not enrolled in the program.

This finding held even after controlling for factors known to be linked to school readiness, including demographic variables such as race (African American vs. Other); gender; student age in months at kindergarten entry; eligibility for the free/reduced-price lunch program; pre-kindergarten educational experiences (e.g., attending pre-K, Head Start, or child care); and early family reading habits.³

Follow-up: Second grade

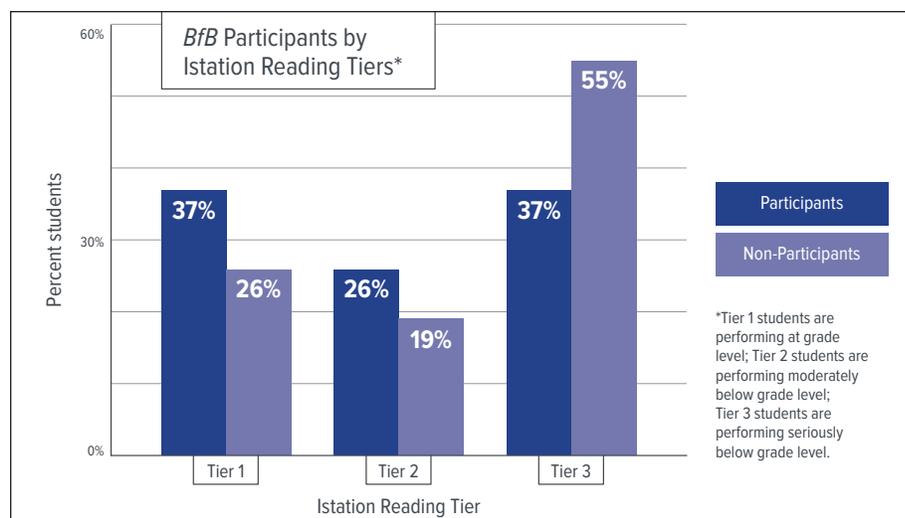
Today, students from the earlier study are in second grade and data are available to determine whether the academic benefits identified at kindergarten entry still remain.

This past fall, all second-grade students in Shelby County Schools were assessed in reading using the Istation Early Reading measure (<http://www.istation.com/>). Istation is a computer adaptive formative assessment that measures a variety of early reading components that are grade-level appropriate. Students receive scale scores for the assessments that are based on both the difficulty level of each question and the accuracy of their response. In

second grade, students receive scale scores for measures of vocabulary, reading comprehension, and spelling. Second grade Istation scores are available for 334 students from the previous study.

One hundred seventy (170) of these students had participated in *Books from Birth* prior to kindergarten entry and 164 students had not participated in the program.

Our analysis indicates that students who had participated in the *Books from Birth* program prior to kindergarten entry had higher scores in reading development in second grade, compared to students who had not participated.



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On the Istation measures of vocabulary and reading comprehension, the difference between the two groups was statistically significant (both p -values=.02).

Moving away from the individual scales to the overall measure of grade-level reading, our analysis indicates there is a difference between *BfB* participants and non-participants in grade-level reading. This is indicated by their overall Istation Early Reading performance.

***BfB* children are more likely to be in the strongest tier and least likely to be in the weakest tier of readers in 2nd grade ($\chi^2=10.30$; $p=.01$).**

These findings add to what is already known about the influence of early experiences on academic performance. It is fairly well established that intervention programs that focus on early reading and other pre-academic skills have an immediate impact on school readiness at kindergarten entry. This work affirms that enriching early experiences can have sustained benefits for children.

Significant differences in vocabulary and reading comprehension

Two points, in particular, should be noted. First, Istation assessments provide scale scores for three grade-level subtests, all of which were used in the above analysis.

The two subtests most fundamentally linked to early reading experiences are the two that showed significant differences between *BfB* participants and non-participants, namely vocabulary and reading comprehension.

The third subtest that did not show a difference between the two groups was spelling. These findings are not surprising, given the nature of what happens when adults and young children read books together.

During book reading, adults and children have opportunities to explore the patterns that occur in written language. Familiarity with written language patterns allows children to know what to expect when they begin reading on their own. Frequent reading also exposes children to many vocabulary words within the context of a story, which provides a scaffold for deciphering the meaning of unfamiliar words. The extent to which adults and children discuss other aspects of the book, such as the illustrations or how they might act if they were in a situation similar to the characters in the book, allows for even more vocabulary exposure. It is less likely that adults and children focus explicitly on the spelling of the words in the books.

The *BfB* advantage remains after we control for other factors associated with reading development

These differences between *BfB* participants and non-participants remain even after controlling for other factors that are known to influence reading.

These findings are not a result of group differences in socioeconomic status or gender.

The participant and non-participant groups were comparable in terms of socioeconomic status and gender (p -values >.05). Factors where group differences were noted – race, being a non-native English speaker, and pre-kindergarten educational experience – were controlled by using them as covariates in the analyses ensuring that the Istation assessment differences between the two groups are linked to whether or not the child participated in the *BfB* program prior to kindergarten entry. Additionally, two other potential influences were considered: mobility rates (transferring from school to school) during kindergarten and first grade and attendance rates in kindergarten and first grade. Findings show no differences between the groups in mobility or attendance rates for either kindergarten or first grade (all p -values >.05).



***Books from Birth* participation is linked to stronger reading performance in second grade**

The initial evaluation of the kindergarten readiness of children enrolled in the *Books from Birth* program, undertaken in the fall of 2011, showed that the group of children who had participated in the program reached school with stronger measures of pre-reading development than their classmates not enrolled in the program. Not only were these differences statistically significant, but they also proved robust, and remained significant even after accounting for other key factors that influence kindergarten readiness, including a child's age in months, their family's income, and their pre-kindergarten experience.

This brief revisits the cohort of children from that original study, now in second grade. Again looking at a measure of age-appropriate reading development (the Istation assessment), analyses indicate that the cohort of children who participated in the *Books from Birth* program before starting kindergarten, continued to enjoy an advantage in reading development scores when compared with their classmates who were not enrolled in the same early childhood reading program.

In particular, significant differences were found between *BfB* participants and non-participants on the two Istation subtests most directly linked to early reading experiences, namely vocabulary and reading comprehension.

These findings affirm the growing body of evidence that early childhood experiences matter, and they have lasting implications for kindergarten readiness and subsequent academic achievement. These findings also suggest that efforts to support the early vocabulary development and pre-literacy skills of infants, toddlers, and young children pay dividends that extend well beyond kindergarten entry on into reading development across the first years of primary school. The association between the *BfB* program and later reading outcomes suggests a policy-amenable way to strengthen not only kindergarten readiness, but also levels of early reading development across the population.

Footnotes

1. Participation means students received one or more *Books from Birth*.
2. The *Shelby County Books from Birth (BfB)* program is an affiliate of Dolly Parton's Imagination Library, which is designed to promote early childhood family reading habits and support literacy development. Imagination Library mails a free, age-appropriate book to each enrolled child monthly, until the child's fifth birthday. All children younger than five years of age, living in Shelby County, Tennessee, are eligible to participate in the program at no cost, regardless of their family's income. Books are carefully selected in order to introduce children and their families to age-appropriate, developmental themes, language, phonics, and vocabulary, and to the exploration and stimulation of the senses. More information about *Books from Birth* can be found at www.booksfrombirth.org
3. A summary of this research can be found at <http://booksfrombirth.org/wp-content/uploads/2011/02/BFB-Report-Executive-Summary-Evaluation.pdf>