

# Identifying and Helping Preschoolers in Columbus who may Benefit from Extra Literacy Support



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## EXECUTIVE SUMMARY

Many young children start kindergarten with less-developed emergent literacy skills and may benefit from extra emergent literacy support. In this project, we partnered with Nemours Children's Health System, Columbus' Ready4Success initiative, and local preschools to identify children who might benefit from one targeted, supplemental emergent literacy program, Nemours BrightStart!. We studied who qualified for this supplemental small-group instruction, how it was used, and whether it impacted children's emergent and conventional literacy skill development. We found that although many Columbus-area children could potentially benefit from extra literacy support, Nemours BrightStart! did not achieve the intended results. Moreover, teachers and Ready4Success community aides faced numerous challenges in implementation that likely impacted program use and success. Our work suggests needing to better support efforts to provide targeted instruction to young children identified as at-risk for reading difficulties. To this end, we provide several recommendations to administrators and practitioners, university instructors and professional development providers, and researchers.

# Recommendations

## *administrators & practitioners*

- Continue screening efforts to identify preschool children in need of extra literacy support.
- Provide supplemental instruction targeted to the emergent literacy needs of identified children.
- When choosing a supplemental literacy approach or program, consider fit with your school/center's needs and consult [Ohio's Evidence-Based Clearinghouse](#) or the [What Works Clearinghouse](#) to find effective programs.
- Identify the resources necessary to provide supplemental instruction, including staffing, physical space, classroom routines, planning and lesson time, behavior management, and knowledge/preparation.
- Consider the potential barriers to effective provision of supplemental emergent literacy instruction (e.g., scheduling, need for additional training) and seek proactive solutions to address these.
- Take advantage of opportunities for community members to assist with emergent literacy instruction while also considering training needed to support this.
- Monitor the supplemental instruction provided by asking whether the approaches/programs are being implemented as intended and if children are progressing in their learning, and then adjust as necessary.

## *teacher educators & professional development providers*

- Continue to provide opportunities for teachers to develop their knowledge and preparation to support emergent literacy development.
- Provide opportunities for teachers to enhance classroom organization, behavior management, and other skills necessary for targeted, small-group instruction.
- Consider extending training opportunities to community members who might be interested in providing extra literacy support in classrooms.

## *researchers*

- Continue to examine how to best support the development of young children's emergent and conventional literacy skills in Ohio.
- When designing and studying targeted supplemental literacy programs, carefully consider the challenges that teachers may face during implementation and necessary supports.
- Make special efforts to disseminate knowledge about targeted literacy programs' effectiveness to teachers and other education stakeholders in the local community.

# Background

Many young children start kindergarten behind their peers in key emergent literacy skills (Chatterji, 2006; Zill & West, 2001), which are the early language and literacy skills foundational for conventional reading and writing. For instance, in Franklin County in 2018, 43% of children started kindergarten not yet demonstrating the skills needed to engage in kindergarten-level literacy instruction (Ohio Department of Education, 2019). These children are disproportionately from marginalized and economically disadvantaged backgrounds. Importantly, children who are behind in emergent literacy skills during preschool are unlikely to catch up to more advantaged peers in later years (Burchinal et al., 2020; Cabell et al., 2011) and are at risk for reading difficulties (Fielding et al., 2007). Together, this suggests that many children in Franklin County might benefit from extra support as they learn to read.

Targeted, supplemental instruction during preschool can help children learn the emergent literacy skills that support future academic success (e.g., Bailet et al., 2009; Goldstein et al., 2017; Lonigan & Phillips, 2016). Researchers have developed many programs to teach emergent literacy skills, including small-group interventions that are available to early childhood teachers. Although these programs are increasingly used in preschool, we have little understanding about their effectiveness or use in authentic preschool settings. Given the potential challenges of providing targeted, supplemental instruction to small groups of children within a larger classroom (Wyatt & Chapman-DeSousa, 2017; Zucker et al., 2013), further understanding this is critical.

To help support young children's emergent literacy skills in Ohio, we partnered with Nemours Children's Health System and Columbus' Ready4Success initiative. We trialed one supplemental emergent literacy program, the Nemours BrightStart! program (NBS!), in preschool classrooms in the greater Columbus area. Prior research in Florida showed that NBS! improved the emergent literacy skills of preschool children who were identified as being behind in emergent literacy skills at the start of preschool (Bailet et al., 2009, 2013; Zettler-Greeley et al., 2018). This research was led by the Nemours Children's Health System, which developed NBS! and whose early literacy specialists visited local preschool centers to provide NBS! lessons to children as part of a community partnership. Currently, NBS! is commercially available to preschool teachers and centers across the U.S.

In this project, we were interested in identifying preschool children in the Columbus area who were at-risk for later reading difficulties and understanding whether NBS! would be beneficial for them. We were specifically interested in whether NBS! improved children's literacy learning when implemented by their classroom teachers, rather than by early literacy specialists hired to deliver the program. We were also interested in whether NBS! improved literacy learning when implemented by Ready4Success staff (whom we called "community aides"), as a variation on the community partnership model used in Florida. Finally, we were interested in how NBS! was used by teachers and community aides, including feedback concerning what helped and hindered the use of NBS! in authentic classroom settings.

# NBS! Program

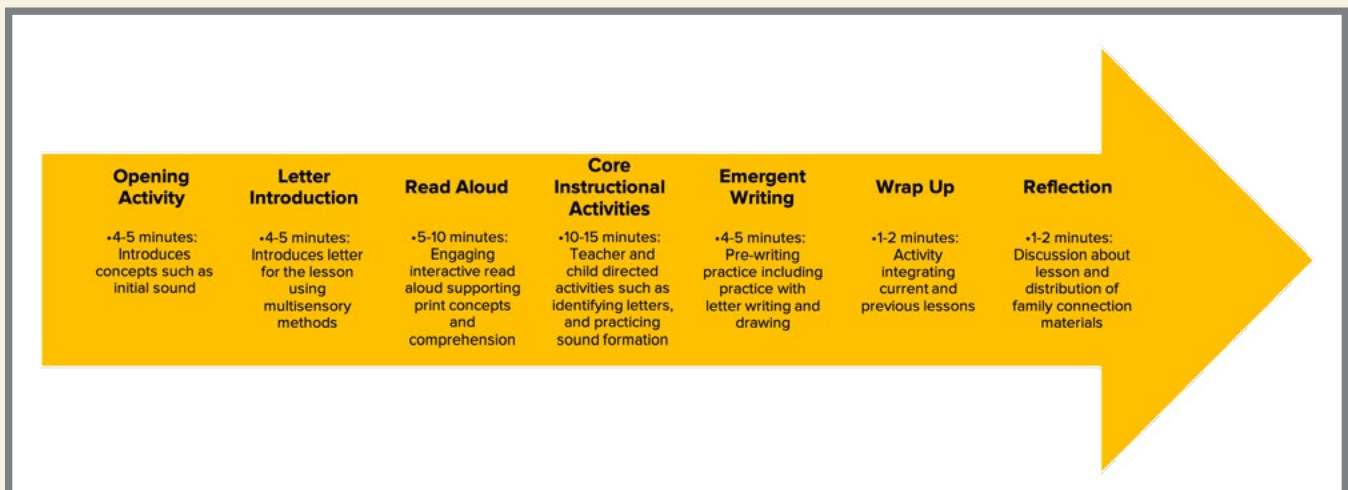
NBS! is designed to target the emergent literacy skills shown in Figure 1. There are 20 scripted lessons designed to be implemented over 20 weeks. Each lesson takes approximately 40 minutes; however, lessons can be split into two 20- to 30-minute parts and implemented over two days. All lessons follow the same seven-part sequence shown in Figure 2 and involve books and other manipulatives. For more detailed information on NBS!, visit [kaplanco.com/nemours](http://kaplanco.com/nemours).

▼ **Figure 1:** Emergent and Conventional Literacy Skill Assessments Used

<b>Emergent Literacy Skills</b>	<b>Oral Language</b> Ability to produce and understand language	<b>Emergent Writing</b> Ability to produce early writing forms and use phonetic spelling	<b>Print Knowledge</b> Familiarity with the functions and forms of printed text	<b>Phonological Awareness</b> Ability to hear and manipulate units of sound	
	<ul style="list-style-type: none"> <li>•Woodcock-Johnson Tests of Achievement III: Oral Comprehension subtest (P1, P2, F1, F2)</li> <li>•Narrative Assessment Protocol-2 (P1, P2)</li> <li>•IGDI: Picture Naming Subtest (P1, P2)</li> </ul>	<ul style="list-style-type: none"> <li>•Gerde Writing Measure: Name Writing scale (P1, P2, F1)</li> <li>•Gerde Writing Measure: Letter Writing scale (P1, P2, F1)</li> <li>•Gerde Writing Measure: Invented Spelling scale (P1, P2, F1, F2)</li> </ul>	<ul style="list-style-type: none"> <li>•TOPEL: Print Knowledge subtest (P1, P2, F1)</li> <li>•Quick Letter Name Knowledge Assessment (P1, P2)</li> <li>•Letter Sound Short Forms (P1, P2)</li> </ul>	<ul style="list-style-type: none"> <li>•TOPEL: Phonological Awareness subtest (P1, P2, F1)</li> <li>•Woodcock-Johnson Tests of Achievement III: Sound Awareness subtest (F2)</li> <li>•IGDI: Alliteration Subtest (P1, P2)</li> <li>•IGDI: Rhyming Subtest (P1, P2)</li> </ul>	
	<b>Conventional Literacy Skills</b>	<b>Writing and Spelling</b> Ability to produce written words and communicate ideas through writing	<b>Word Reading:</b> Ability to translate printed words into their spoken forms	<b>Reading Comprehension</b> Ability to understand printed text	
		<ul style="list-style-type: none"> <li>•Gerde Writing Measure: Story Composition scale (F2)</li> <li>•Woodcock-Johnson Tests of Achievement III: Spelling subtest (F1, F2)</li> </ul>	<ul style="list-style-type: none"> <li>•Woodcock-Johnson Tests of Achievement III: Letter-Word Identification and Word Attack subtests (F1, F2)</li> </ul>	<ul style="list-style-type: none"> <li>•Woodcock-Johnson Tests of Achievement III: Reading Comprehension subtest (F1, F2)</li> </ul>	

*Note.* Abbreviations listed in parentheses indicate when the measure was administered: P1 = fall of preschool, P2 = spring of preschool, F1 = follow up one year after participation when many children matriculated to kindergarten, F2 = follow up two years after participation when many children matriculated to first grade. TOPEL = Test of Preschool Early Literacy. IGDI = Individual Growth and Development Indicators of Early Literacy. Full citations for all measures are provided in the [Supplementary Materials](#).

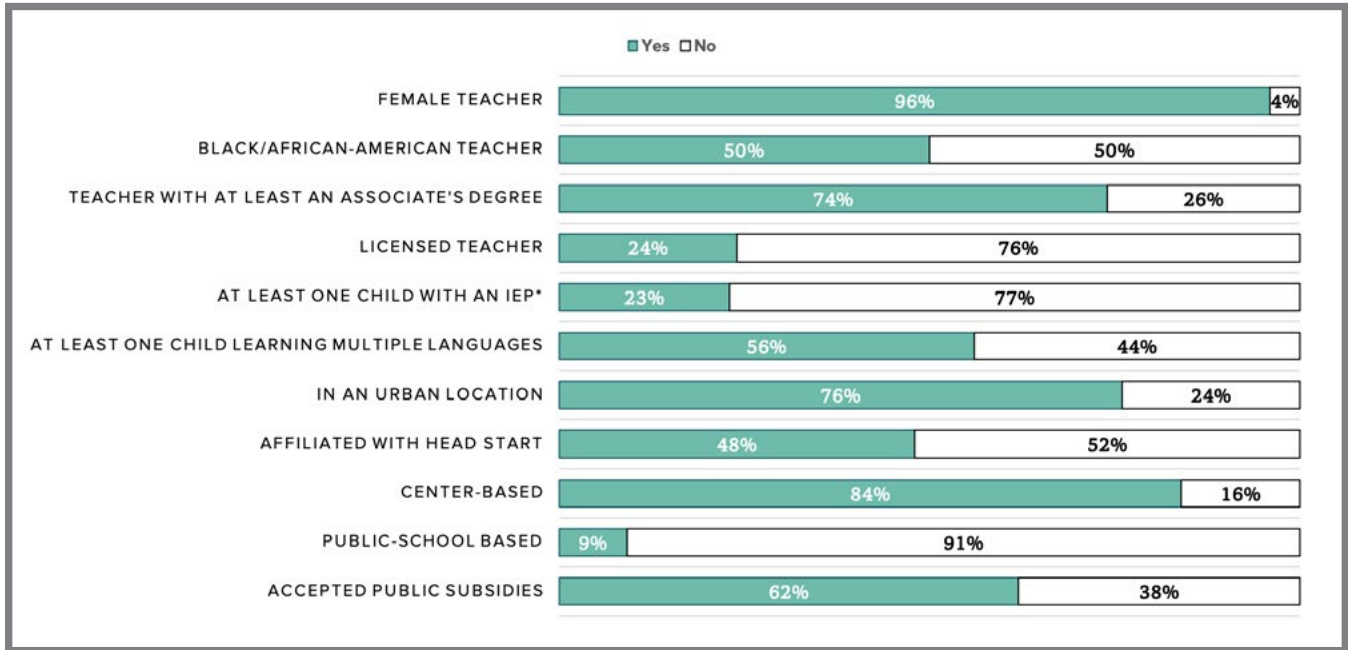
▼ **Figure 2:** Structure and Sequence of Nemours BrightStart! Lessons



# The Project

Through Ready4Success, we partnered with local preschool centers whose teachers were willing to try NBS! in their classrooms. We administered the Get Ready to Read – Revised screener (Whitehurst & Lonigan, 2010) to select children in these classrooms who could benefit from NBS!. Using a lottery system, we assigned some teachers to provide the NBS! lessons to the small group of selected children in their classrooms and some teachers to have Ready4Success community aides visit their classrooms to provide the NBS! lessons to selected children. These teachers and community aides received the commercially available NBS! lessons, materials, and 2-day professional development training. Other teachers were assigned to a control condition; these teachers continued their typical instructional practices only and received NBS! after the research project was completed. Details about the 98 participating classrooms are shown in Figure 3.

▼ **Figure 3:** Details of Participating Classrooms



Note. Numbers on the green bars represent the percentage of classrooms exhibiting the specified characteristic. IEP = individualized education plan.

During the school year, we collected data about participating children’s emergent literacy skills and teachers’ and community aides’ use of NBS!. To understand the effects on children’s learning, we administered emergent literacy assessments in the fall (pretest) and spring (posttest) and additional follow-up assessments one and two years later (see Figure 1 for assessments). We also obtained children’s literacy scores on the Ohio Kindergarten Readiness assessment. To understand the use of NBS!, we collected logs and videos of NBS! lessons plus feedback from teachers and community aides.

Additional details about the project are provided in [Piasta, Logan, Thomas, Zettler-Greeley, Bailet, and Lewis \(2021\)](#) and Piasta, Logan, Zettler-Greeley, Bailet, Lewis, and Thomas (2021).

# What We Learned

## ***Who was eligible to receive NBS!?***

We screened a total of 738 preschool children. Forty-nine percent of children (n = 359) were identified as at-risk for later reading difficulties and eligible to receive NBS!. Fifty-one percent (n = 375) were not eligible to receive NBS!; 43% scored in the average range and 8% scored above average. Of the 359 children who were identified as at-risk, 281 were selected to participate in the project.

We compared the 281 children identified as at-risk and selected to participate in the project to a group of 290 peers who were enrolled in the same classrooms but not considered at-risk for later reading difficulties. We found no differences between children in terms of their gender, race, receipt of special education services, or primary language spoken. We did find differences based on ethnicity, parent education level, and household income. In our project, children identified as at-risk for later reading difficulties were more likely to be Hispanic or Latinx and less likely to come from upper-income homes or have parents with higher education levels when compared to their peers. Our findings align with prior research indicating that children from lower-income households and children of color are at higher risk for reading difficulties (e.g., Aikens & Barbarin, 2008; Cabell et al., 2011).

## ***Did NBS! improve children's literacy learning...***

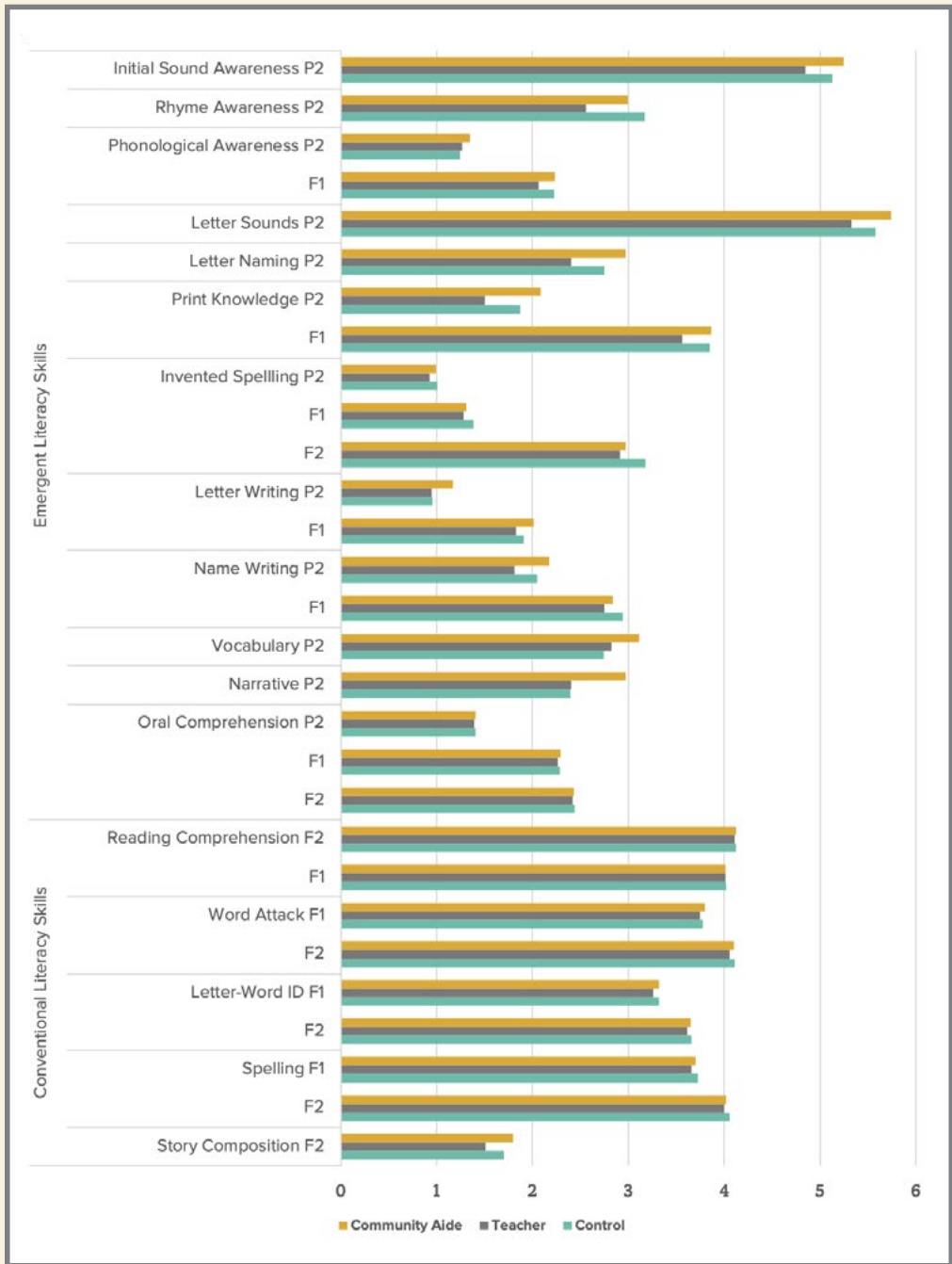
***in preschool?*** In prior work (Piasta, Logan, Zettler-Greeley et al., 2021), we analyzed NBS! impacts on children's outcomes during the preschool year; we summarize these findings in this report. Considering children's preschool emergent literacy skills, most children made progress from the beginning to the end of the year. As shown in Figure 4, the children who received NBS! did not make significantly more progress than the children in the control condition. In general, children's emergent literacy learning was also not different based on who taught the program (teacher or community aide). These results show that NBS! did not have the same positive effects on children's literacy skills in Columbus-area preschools as it did in Florida.

***one year later?*** Based on caregivers' reports, one year after participating in the project, 30% of children were still in preschool, and 70% had transitioned to kindergarten. Children continued to increase their emergent and conventional literacy skills, but we did not find differences in literacy scores based on preschool participation in NBS!. As with the preschool year, it also did not matter who taught NBS! (teacher or community aide).

***two years later?*** Two years after participating in the project, almost all children were in kindergarten or first grade. We again found no difference in the literacy skills for children who participated in NBS! compared to those who did not. Further, there were no differences for those who were taught by community aides or teachers.

***for kindergarten readiness?*** We obtained state kindergarten readiness data for children who participated in the first two cohorts of the project. We found no difference in children's kindergarten language and literacy readiness based on whether or not they participated in NBS! during preschool or whether NBS! was taught by teachers or community aides. Seventeen percent of the children who received NBS! and 21% of children in the control condition met kindergarten language and literacy readiness expectations. Additionally, we found that children who we identified as at-risk for later reading difficulties were still less likely to demonstrate kindergarten language and literacy readiness than their peers who were not at-risk.

▼ **Figure 4:** Children’s Language and Literacy Scores after Participating in NBS!



*Note.* Intent-to-treat multilevel model results after controlling for pretest skills using imputed datasets to account for any missing data; there are no significant differences between control and NBS! conditions (see Piasta, Logan, Zettler-Greeley et al., 2021 for full details). Woodcock-Johnson scores are divided by 100 for graphing. Narrative, print knowledge, phonological awareness, and letter naming scores are divided by 5 for graphing. Details of analyses and full results are presented in [Supplementary Materials](#).

In summary, while many children improved their literacy learning over time, the effect of NBS! was not as strong as we had anticipated. We saw that children who received the NBS! lessons did not increase their emergent or conventional literacy skills any more than those who did not receive supplemental instruction. Further, we found that those children whom we identified as at-risk for later reading difficulties – those who were expected to benefit from extra literacy support – were still less likely than their non-at-risk peers to demonstrate kindergarten language and literacy readiness. To help understand these findings, we examined how NBS! was used in classrooms and what helped or hindered the use of NBS!.

### ***How was NBS! used?***

We analyzed lesson logs and videos along with survey data to understand how teachers and community aides used NBS! and summarize these findings in this report (see [Piasta, Logan, Thomas et al. 2021](#) for full details).

On average, children participating in NBS! were taught 8 of 20 lessons. However, some children received 0 lessons while others received all 20. When comparing teachers and community aides, there was a significant difference in the number of lessons taught, with community aides conducting an average of seven more lessons than teachers.

The extent to which lessons included all key instructional components also varied across children. Most children experienced lessons that included 66% to 97% of key lesson components, with only five small groups experiencing lessons falling below that range. Again, we considered whether teachers and community aides differed in this aspect of implementation. Whereas teachers generally completed 81% of key lesson components, community aides completed 73% of key lesson components.

These findings present an interesting picture in which the children receiving more lessons may have received lower-quality lessons than children who received fewer but higher-quality lessons. These findings, and the fact that children typically received only half of the lessons, point to the challenges of implementing targeted, small-group programs in preschool classrooms. While teachers may be well prepared to teach emergent literacy lessons, they may struggle to find the time to teach the lessons within their busy days. Conversely, community aides may have less preparation for teaching emergent literacy, but, as a visitor to the classroom and not the teacher in charge, they may be more likely to have the time to teach the lessons.

We directly asked teachers and community aides for their perspectives about implementing NBS!. They noted a number of supports and challenges.

***What helped use?*** Teachers and community aides frequently mentioned the lesson structure and design of NBS! as facilitating their implementation. Teachers (76%) and community aides (100%) wrote about the provision of materials and the multisensory activities, and community aides (86%) particularly saw the benefits of having scripted lessons. Teachers and community aides also appreciated the programs' interactive nature (e.g., "I think most of the lessons were fun and engaging for children") and the fact that the materials aligned with children's interests (e.g., "the books were great and the kids really liked them"). Additionally, both teachers (24%) and community aides (43%) discussed that having time to practice and prepare ahead of time was useful.

***What hindered use?*** One of the most commonly reported challenges to using NBS! was time management. Teachers (59%) and community aides (71%) mentioned having limited time or difficulty incorporating the lessons into the daily routine. Fifty-nine percent of teachers also reported a lack of support staff as problematic. As one teacher wrote, "It is very difficult to break away and find the time to prepare and complete this assignment and my regular job obligations....and if any member of our staff is absent; late; etc.; for any reason it can affect my having coverage and/or any additional demands from the job can set things back." Teachers (35%) and community aides (100%) also mentioned difficulty managing child absences, as well as behavioral issues (teachers 6%; community aides 57%), as challenges when implementing NBS!.





## Conclusion and Implications

We found that many children in Columbus would benefit from extra emergent literacy support. NBS!, however, did not help these children in a meaningful way, at least not as it was used in this project. Continuing to screen and identify children at-risk for later reading difficulties, such as conducted locally by Ready4Success, is important. Equally important, however, is determining instructional next steps for these children. We learned that there are many challenges to implementing targeted, small-group literacy programs in authentic preschool classrooms, which may impact effectiveness. Unless these challenges are addressed, and teachers and other early childhood community members are supported in enacting this instruction, the potential benefits of supplemental programs like NBS! may not be realized.

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# Author Note

Nemours receives royalties through the sale of the commercially available curriculum involved in this research. The potential for bias in reporting study results was minimized through the adoption of the following precautions, as outlined in the investigators' signed Memorandum of Understanding: (a) Nemours' institutional responsibilities for this grant were limited to instructor professional development curriculum training and implementation fidelity monitoring, including the development and maintenance of the implementation fidelity database for this study, (b) Nemours investigators Zettler-Greeley, Baillet (affiliated with Nemours until April, 2018; now at Kaplan Early Learning Company), and Lewis had no role in participant/site recruitment or data collection for the study, were blind to classroom and participant study assignment, and did not participate in data analyses concerning program impacts, (c) The Ohio State University (OSU) investigators conducted all data analyses concerning impacts of the Nemours BrightStart! program, and (d) OSU investigators retained the final decision as to the findings and interpretation that are reported.

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