

Title:

Evaluation of Around the Corner: Funded by the Investing in Innovation Fund (i3) Grant #112209

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## **EXECUTIVE SUMMARY: Evaluation of Around the Corner**

### **Background**

This report highlights findings from an evaluation of Around the Corner (ATC) conducted by researchers at the Center for Research and Reform in Education (CRRE) at Johns Hopkins University (JHU) and funded by an Investing in Innovation (i3) Fund development grant. The Success for All (SFA) Foundation developed Around the Corner (ATC).

ATC is a program for both preschool and kindergarten students that enables teachers to show children how the world works for concepts that are not possible to illustrate in a classroom with actual objects. The program includes computer activities and videos for children. Opportunities to view videos again at home (Home Links) provide the repeated experiences with language concepts and vocabulary that are necessary to language development. An additional component of the ATC intervention includes interactive, video-based professional development for teachers.

Program developers at SFA hypothesized that ATC would improve young students' early reading skills. ATC was implemented in the 2014-15 and 2015-16 school years to preschool and kindergarten students. This evaluation study estimates the two-year cumulative impact of ATC on students' early reading skills.

### **Research Questions**

The research question for the impact study is: What is the cumulative impact over two years (preschool to kindergarten) of ATC on students' early reading skills in comparison with children experiencing the business-as-usual condition (e.g., Curiosity Corner and KinderCorner without the interactive multimedia aspects)?

The research questions for the implementation study are:

1. What is the overall level of fidelity of implementation and how much variation in implementation fidelity was there across sites (schools and classrooms)?
2. What are the attitudes and experiences of teachers and parents regarding the intervention?
3. What are the similarities and differences between ATC and control classes?

### **Research Design**

The impact study is a cluster randomized controlled trial in which 12 elementary schools already using programs for pre-K and K students created by SFA were randomly assigned to either the experimental and control condition (six per condition). All pre-K and K teachers and students in those schools participated in the intervention over a two-year period. The study uses mixed methods to estimate the program impact and document the fidelity of implementation and perceived quality of the program.

## Sample

Sample selection targeted SFA's partner districts, and schools were selected based on interest in participating, geographic diversity (e.g., north, south, southwest, and mid-west; rural, large, mid-size, and small city), and student need. The impact study uses an intent-to-treat student sample. Students were included in the sample if they were in preschool in a study school in the 2014-15 school year and in kindergarten in a study school in the 2015-16 school year.

## Measures

The outcome measures for the impact study are tests that gauge students' early reading skills. The outcome measures were administered to kindergarten students in the spring of the 2015-16 school year and they are:

- Woodcock-Johnson III Word Attack subtest (confirmatory)
- Woodcock-Johnson III Letter-Word Identification subtest (exploratory)
- Peabody Picture Vocabulary Test (PPVT) (exploratory)
- Test of Language Development (TOLD-4) Sentence Imitation subtest (exploratory)

The fidelity of implementation of the ATC program was measured by training of SFA coaches, teacher professional development, communication meetings for principals and program facilitators, distribution of ATC materials to teachers, and training or other resources provided to parents on use of home media. To understand the perceived quality of the program by teachers and parents and the degree to which treatment teachers implemented the program in their classrooms, additional data were collected:

- Teacher questionnaires
- Parent surveys
- School and classroom implementation ratings
- School observations and site visit reports

## Analytic Approach

Multiple linear regression was used to estimate the impact of ATC on students' early reading skills. The model included the treatment indicator, baseline pre-test score, English language learner status, baseline performance level, and interaction terms.

The analysis of qualitative data was guided by Miles and Huberman's (2004) model, consisting of transcribing responses, deriving codes, identifying themes, and revision and refinement. Findings were triangulated across multiple data sources per Denzin's (2001) framework.

## Findings

We found no statistically significant differences between ATC and control students in early reading skills, as measured by the confirmatory outcome measure. We also found no statistically significant differences between ATC and control students on additional post-tests analyzed for exploratory purposes.

In the implementation study, we found that the ATC program was implemented with fidelity in both implementation years (2014-15 and 2015-16). Further, the data show that ATC improved home-to-school interactions and student engagement according to teachers and parents. The multimedia component in ATC afforded parents and teachers overlapping understandings of what children were learning. Parents reported that the home videos increased their child's engagement in school and reinforced what their child learned at school. Finally, the vast majority of teachers believed that ATC benefitted students' language and literacy skills.

## **Conclusion**

In evaluating the two-year cumulative impact of the ATC program on young children's early reading skills, we found no statistically significant differences in early reading skills for ATC and control students on the confirmatory outcome measure. The findings of the impact study suggest that the evaluation study may have been underpowered and that the effect of ATC on some measures of early reading skills compared with the business-as-usual condition may be directionally positive on average but less than 0.20 standard deviations. More research is needed with larger sample sizes and lower minimally detectable effect sizes.

Another limitation of this study is that the business-as-usual condition consists of programs that are, at least in some ways, similar to the ATC intervention. Thus, the effect size of ATC may be much greater in a context where ATC participation is compared with a lower quality preschool or kindergarten program.

It is also noteworthy that qualitative data revealed positive attitudes by both teachers and parents regarding the impacts of ATC on student engagement and improving school-to-home connections. If proven to be replicable and generalizable in future studies, the overall results of this study, therefore, have educational significance by showing ATC to produce comparable achievement results to its already research-supported core programs (Curiosity Corner and KinderCorner) while potentially increasing student engagement and parental involvement in their children's education.

## Evaluation of Around the Corner

This report highlights findings from an evaluation of Around the Corner (ATC) conducted by researchers at the Center for Research and Reform in Education (CRRE) at Johns Hopkins University (JHU) and funded by an Investing in Innovation (i3) Fund development grant. The Success for All (SFA) Foundation developed ATC for preschool and kindergarten students. Program developers hypothesized that ATC would improve young students' early reading skills. ATC was implemented in the 2014-15 and 2015-16 school years to preschool and kindergarten students. This evaluation study estimates the two-year cumulative impact of ATC on students' early reading skills.

### Background

Curiosity Corner is a current comprehensive program offered by the SFA Foundation for three- and four-year-old preschoolers. The program is designed to provide a strong foundation in language and literacy, mathematics, science, listening and social skills, creative expression, and positive self-esteem through a holistic, thematic approach to instruction. KinderCorner is a current comprehensive kindergarten program offered by SFA based on research indicating that young children learn best when material is delivered holistically rather than in isolation.

The main focus of Curiosity Corner is on language development; children are exposed to a broad range of language-rich experiences focusing on themes that build out from the children themselves, their families, and their neighborhoods, to age-appropriate experiences with the languages of science, social studies, mathematics, and other areas. KinderCorner shares with Curiosity Corner a focus on language development, cooperative learning, exploration, phonemic awareness, and development of the whole child. It adds a focus on phonics, vocabulary, and comprehension, using fast-paced instruction, paired reading activities, and comprehension-building experiences.

Around the Corner (ATC) is a program for both preschool and kindergarten students that combines and extends components of both Curiosity Corner and KinderCorner. Technology enhancements around embedded multimedia enable teachers to show children how the world works for concepts that are not possible to illustrate in a classroom with actual objects. The program includes computer activities and videos for children. Opportunities to view videos again at home (Home Links), with or without family members, provide the repeated experiences with language concepts and vocabulary that are necessary to language development. An additional component of the ATC intervention includes interactive, video-based professional development for teachers.

ATC is based on the rationale and research evidence showing that video content greatly enhances children's learning if it directly reinforces instructional objectives. For example, research on the PBS television show *Between the Lions*, which uses puppets, animation, and live action to build early reading skills, has shown significant positive effects of this program for young learners (Linebarger, 2000; Linebarger, Kosanic, Greenwood, & Doku, 2004). Also, thirty years of research shows positive impacts of *Sesame Street* (Fisch & Truglio, 2000; Rice, Huston,

Truglio, & Wright, 1990). ATC uses this impactful content in a more intentional manner, to directly reinforce teachers' lessons.

Embedded multimedia refers to the use of brief visual content, such as video, pictures and linked text, into daily lessons. By directly linking visual and auditory instruction, embedded multimedia can enhance students' cognition and motivation (Mayer, 2008). Research finds that animations, with content closely linked to the content being taught, can greatly increase learning (Hoeffler & Leutner, 2006; Neuman, 2006; Savage et al., 2010).

### **Research Questions**

The research question for the impact study is: What is the cumulative impact over two years (preschool to kindergarten) of ATC on students' early reading skills in comparison with children experiencing the business-as-usual condition (e.g., Curiosity Corner and KinderCorner without the interactive multimedia aspects)?

The research questions for the implementation study are:

1. What is the overall level of fidelity of implementation and how much variation in implementation fidelity was there across sites (schools and classrooms)?
2. What are the attitudes and experiences of teachers and parents regarding the intervention?
3. What are the similarities and differences between ATC and control classes?

### **Method**

#### **Research Design**

The impact study is a cluster randomized controlled trial in which 12 elementary schools already using SFA's Curiosity Corner and KinderCorner in pre-K and K were randomly assigned to either the experimental and control condition (six per condition). The pre-K and K teachers in these schools will teach according to their assigned treatment (ATC or the existing SFA programs), and all pre-K and K students in ATC schools will receive the intervention over a two-year period. The study uses mixed methods to estimate the program impact and document the fidelity of implementation and perceived quality of the program.

#### **Sample**

Sample selection targeted the partner districts that were already implementing Curiosity Corner and KinderCorner. Districts signed letters of intent to participate in January, 2014. From these districts, 12 schools were selected based on interest in participating, geographic diversity (e.g., north, south, southwest, and mid-west; rural, large, mid-size, and small city), and student need. Randomization occurred on March 10, 2014. ATC is designed to enhance pre-reading and language skills of young children in virtually any preschool and kindergarten context; however, it is primarily targeted toward disadvantaged and minority children who enter preschool far behind middle-class students in exposure to pre-reading skills and vocabulary. The program also strongly focuses on students who are English language learners (ELLs). It meets the needs of

ELLs by modifying instruction, providing constant opportunities to use English generatively, and using video and pictures to build English vocabulary.

District research agreements were effective July 1, 2014, providing consent at the school level for participation in the evaluation. Student-level consent was not obtained as the study was deemed exempt under IRB regulations based on the following: This was a school-level random assignment that utilized standard educational testing to evaluate instructional practices. Results were reported in the aggregate with no identifying information linked to any individual participant. However, oral assent was obtained because students were 3-5 years old and not able to read or fully understand written consent. Students were included in the sample if they were in preschool in a study school in the 2014-15 school year and in kindergarten in a study school in the 2015-16 school year. Students were included in the sample if they had non-missing pre- and post-test scores.<sup>1</sup>

Table 1

*District Characteristics*

| District name                   | Geographic location | Urbanicity <sup>2</sup> |
|---------------------------------|---------------------|-------------------------|
| Greater Johnstown, Pennsylvania | Mid-Atlantic        | Midsize city            |
| St. Martin Parish, Louisiana    | South               | Rural                   |
| Morgan County, Missouri         | South               | Rural                   |
| Alhambra, Arizona               | Southwest           | Large city              |
| Steubenville City, Ohio         | Midwest             | Small city              |

Table 2

*Student Characteristics*

|                      | All students | Treatment | Control |
|----------------------|--------------|-----------|---------|
| Black                | 16.8%        | 26.4%     | 7.0%    |
| White                | 23.6%        | 17.4%     | 29.9%   |
| Latino               | 42.8%        | 38.0%     | 47.6%   |
| Other Race/Ethnicity | 16.8%        | 18.1%     | 15.5%   |
| FARMS                | 99.5%        | 100.0%    | 98.9%   |

<sup>1</sup> No missing values on either the pre- or post-test were imputed.

<sup>2</sup> Urbanicity was collected from the National Center for Education Statistics' district directory information for the 2013-14 school year.



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|                   | All students | Treatment | Control |
|-------------------|--------------|-----------|---------|
| ELL               | 30.2%        | 26.7%     | 33.8%   |
| Special education | 7.5%         | 7.9%      | 7.0%    |
| Female            | 48.5%        | 48.4%     | 48.7%   |

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## Measures and Instruments

The pre- and post-tests for the impact study are tests that gauge students' early reading skills. Baseline testing occurred between September – November, 2014, and all students enrolled in the participating schools at the time were assessed. There were no schools or students who opted out of the assessment. Pretests were administered to verify the comparability at baseline of the experimental and control student samples and to serve as a covariate in the model to estimate program impacts. Preschool students were pretested in the fall of the 2014-15 school year using the Peabody Picture Vocabulary Test (PPVT-III) (Dunn, & Dunn, 1997), a standardized, individually-administered measure of children's receptive vocabulary. The post-tests were administered to kindergarten students in the spring of the 2015-16 school year during a three to four week testing window. The post-tests analyzed were:

- Woodcock-Johnson III Word Attack subtest (confirmatory)
- Woodcock-Johnson III Letter-Word Identification subtest (exploratory)
- Peabody Picture Vocabulary Test (exploratory)
- Test of Language Development (TOLD-4) Sentence Imitation subtest (exploratory)

The fidelity of implementation of the ATC program was determined on the basis of whether coaches attended trainings, treatment teachers attended professional development, coaches conducted site visits to schools and communicated with principals, treatment teachers received the necessary ATC lesson materials and technological equipment, and training or other resources were provided to parents on use of home media.

To understand the perceived quality of the program by teachers and parents and the degree to which treatment teachers implemented the program in their classrooms, additional data were collected:

- Teacher questionnaires were administered in spring 2015 and fall 2015 to treatment teachers. The questionnaires gauged teachers' perception of the ATC program, as well as its benefits to the students.<sup>3</sup>
- Parent surveys were administered in spring 2015 and fall 2015 to parents of treatment students. The surveys gauged parent feedback regarding children's use of and engagement in interactive videos.<sup>4</sup>
- Snapshots and school visit reports were conducted multiple times each year in SYs 2014-15 and 2015-16 in both treatment and control schools. Snapshots are observations of school-wide phenomena (e.g., student engagement and instructional processes). School visit reports are summaries of meetings between program coaches and school staff that document school accomplishments and further goals in implementing the SFA programs (Curiosity Corner and KinderCorner for control schools, and the programs with the multimedia component for treatment schools).
- School ratings were determined once each year for SYs 2014-15 and 2015-16 for treatment schools. These ratings reflected classroom and school fidelity of program implementation, as well as instructor efficacy.

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<sup>3</sup> For the spring 2015 teacher questionnaire, 100% of the 19 treatment teachers responded. For the fall 2015 teacher questionnaire, 24 of 44 treatment responded, a return rate of 55%. Results for the fall 2015 and spring 2015 teacher questionnaires were similar.

<sup>4</sup> The parent respondent rate was 63% in fall 2015 and 52% in spring 2015.

All data for the implementation study were collected by SFA.

### **Analytic Approach**

Multiple linear regression was used to estimate the impact of ATC on students' early reading skills. The following model was used to estimate program impacts:

$$Y = \beta_0 + \beta_1(\text{Pretest}) + \beta_2(\text{ATC}) + \beta_3(\text{ELL}) + \beta_4(\text{ATC*ELL}) + \beta_5(\text{Baseline Performance Level}) + \beta_6(\text{ATC*Baseline Performance Level}) + \epsilon$$

Where Y is the outcome of interest,  $\beta_0$  is the constant; Pretest is the student's baseline PPVT score; ATC is an indicator for whether a student was attending a school participating in ATC; ELL denotes whether the student was an English language learner; Baseline Performance Level was whether the student scored low, average, or high on the pretest<sup>5</sup>; ATC\*ELL is the interaction term between ATC and ELL; ATC\*Baseline Performance Level is the interaction term between ATC and Baseline Performance Level; and  $\epsilon$  is the residual. Our primary interest is on the coefficient  $\beta_2$ , which estimates the intent-to-treat impact of ATC on students' early reading skills. To account for the multilevel structure of the data, the standard errors were adjusted for clustering at the school level.<sup>6</sup>

We analyzed the qualitative data for the implementation study using Miles and Huberman's (2004) model, which consists of transcribing responses, deriving codes, identifying themes, and revision and refinement. Findings were then triangulated across multiple data sources per Denzin's (2001) framework. Qualitative data include teacher questionnaires, parent surveys, snapshots, and school visit reports. School ratings and parent surveys were analyzed using descriptive statistics.

## **Findings**

### **Impact Study**

We found no statistically significant differences for ATC and control students in early reading skills, as measured by the confirmatory measure, the Word Attack subtest. The estimated standardized effect size indicates that ATC may have positively impacted students' early reading skills, however, the estimated standardized effect size (0.10,  $p=.62$ ) was smaller than anticipated. This evaluation study was powered to detect an effect size of 0.20 standard deviations or greater.<sup>7</sup>

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<sup>5</sup> Students were divided into three equal groups based on their performance on the pre-test: low, average, or high. Baseline performance level was coded as 1 (low), 2 (average), or 3 (high). However, the impact estimate was obtained using a pairwise comparison using analysis of covariance. The impact estimate represents the adjusted mean difference with respect to the regression model between treatment and control students for students in each baseline performance level subgroup.

<sup>6</sup> The standard errors were adjusted using a robust cluster standard error option in SPSS.

<sup>7</sup> The Pearson correlation between the pre and post-test was .12.

Table 3

*Regression Results for Main Confirmatory Contrast*

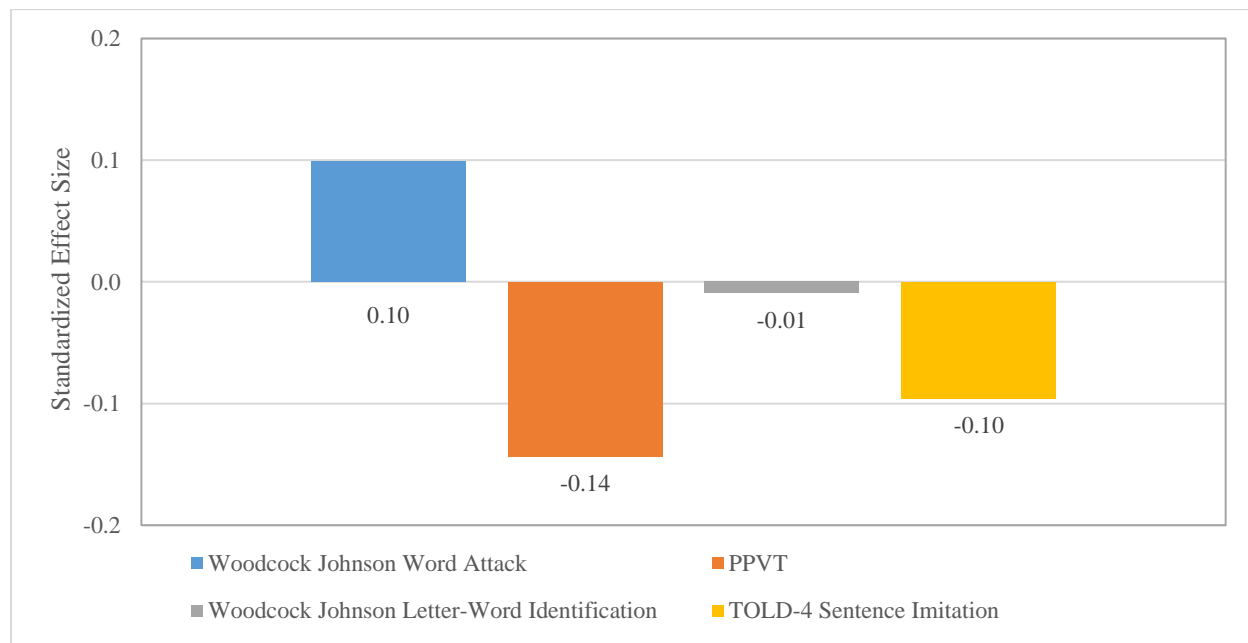
| Outcome variable                 | Sample                      | School N | Student N | Impact estimate (Standard error) | Comparison group mean | Standardized effect size | P-value |
|----------------------------------|-----------------------------|----------|-----------|----------------------------------|-----------------------|--------------------------|---------|
| Woodcock-Johnson III Word Attack | All students (confirmatory) | 6        | 548       | 2.50 (5.07)                      | 460.54                | 0.10                     | .62     |

Table notes:

- Impact and cluster and student attrition tables are included in the Appendices.
- The standardized effect size is the treatment effect estimated by the multiple linear regression model divided by the pooled unadjusted standard deviations in the treatment and control groups.
- The standard errors and p-values were adjusted for clustering at the school level.

The estimated impacts of ATC were also analyzed for exploratory purposes using a number of additional post-tests. These findings also showed no statistically significant differences for ATC and control students. Regression results from additional post-tests are not provided in the previous table nor in the Appendix because the outcome measures were analyzed for exploratory purposes only. Standardized effect sizes for all post-tests are shown in Figure 1 below.

Figure 1

*Standardized Effect Sizes of Impact of ATC on Students' Early Reading Skills*

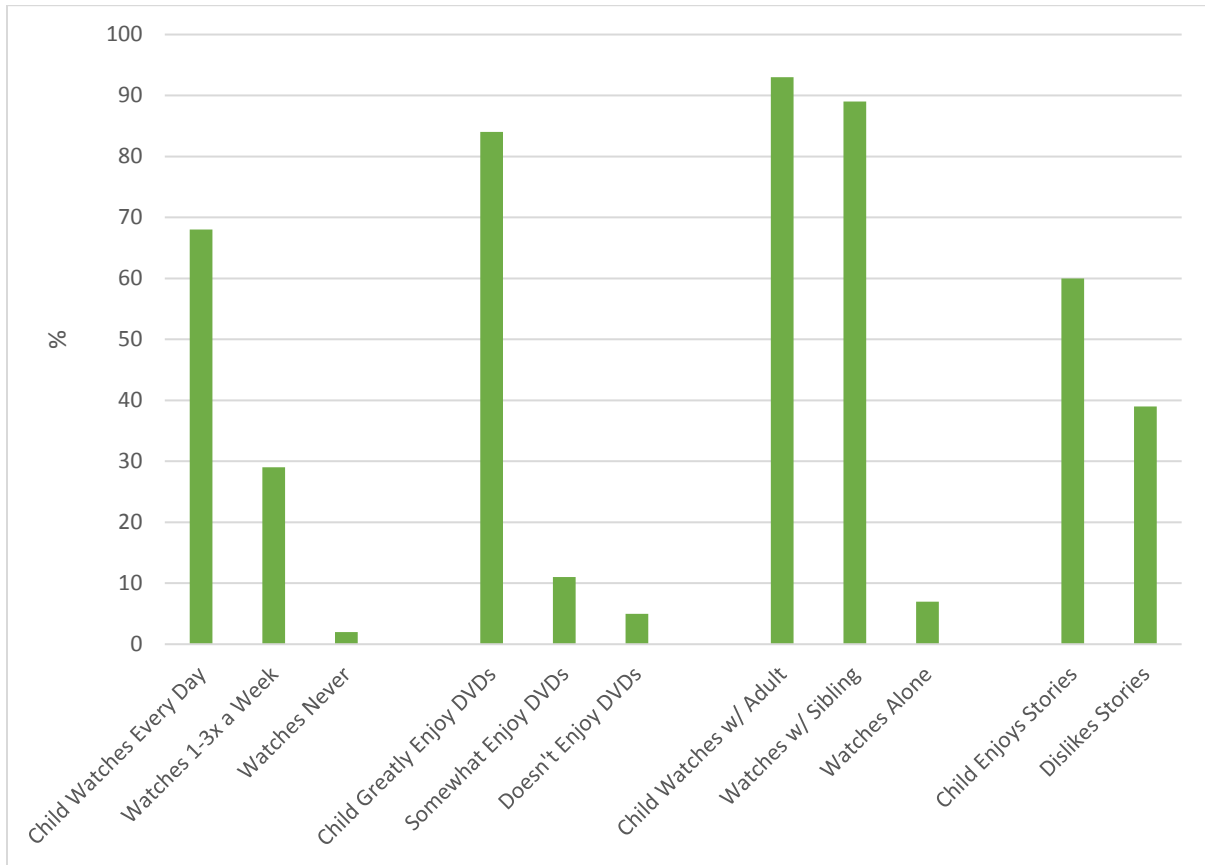
Woodcock Johnson Word Attack 0.10 Woodcock Johnson Letter-Word Identification -0.01  
 Peabody Picture Vocabulary Test -0.14 Test of Language Development Sentence Imitation -0.10

### **Implementation Study**

The qualitative data show that ATC improved home-to-school interactions, as well as student engagement. The introduction of Home Links (HL) created content interaction and reinforcement between school and home while affording parents and teachers overlapping understanding of what children were learning. One teacher noted that “vocabulary is spilling over and being used” in the classroom and at home. Based on their conversations with parents, teachers also described how parents, in watching the HL DVDs with their child, felt more connected to what was happening in class.

Many parents also commented that the HL DVDs provided them with a better understanding of what their child was doing in school because their children watched the DVDs at home. As one parent noted, “It allows me to see what my daughter is learning each day in school and engage her in more conversation about it.” Many parents stated that the DVDs reinforced what the child learned at school, and many parents also noticed an increase in their child’s engagement in schoolwork and homework due to the HL DVDs. In general, according to parents, a majority of children watched HL DVDs every day; greatly enjoyed watching the videos; watched with an adult and/or a sibling; and enjoyed the accompanying stories (see Figure 2).

Figure 2

*Parent Survey Results*

Note: This figure presents the spring 2015 parent survey results. The parent respondent rate was 52%.

Results: Child watches every day 68%; 1-3 times per week 29%; never watches 2%  
 Greatly enjoys DVDs 84%; Somewhat enjoys DVDs 11%; Doesn't enjoy DVDs 5%  
 Child watches with adult 93%; watches with sibling 89%; watches alone 7%  
 Child enjoys stories 60%; Dislikes stories 39%

The vast majority (93%) of teachers also believed that ATC benefitted students' language and literacy skills. Forty-eight percent believed that ATC benefitted students' development "a great deal," and the other 52% believed that ATC benefitted students' development only "somewhat" or "not much." Teachers noted that the most valuable aspects of ATC content were the songs, music, and dancing, as well as the familiarity (for students) of the *Sesame Street* characters. Twenty-nine percent of teachers considered the stories the least valuable component; some teachers recommended that the videos be shortened, as some videos were considered too long and student attention waned. Finally, several teachers suggested that the videos be made available on other platforms such as YouTube or made smart phone accessible.

According to parents, their children particularly enjoyed the interactive singing and dancing, and the alphabet, letters, and number sections of the videos. Approximately 40% of parents also noted that the stories were too long or caused the child to become distracted, although 60% of parents stated that their child liked the stories. Several parents suggested more

math, writing, and spelling activities. Other parents would also like the introduction of activities which did not necessarily revolve around watching television.

Regarding fidelity of ATC implementation, we found that in both implementation school years (2014-15 and 2015-16), the program was implemented with fidelity in four out of five program components: training of SFA coaches, teacher professional development, communication meetings for principals and program facilitators, and distribution of ATC materials to teachers. We did not have evidence to determine whether the fifth program component — training or other resources for parents on use of home media — was implemented.

We found little variation in the fidelity of ATC implementation across sites (schools and classrooms). However, there was some variation in how SFA coaches rated treatment schools and classrooms on the basis of fidelity of program implementation and instructor efficacy (see Figure 3).

Figure 3

*SFA School Ratings for Program Implementation and Instructor Efficacy in Treatment Schools*

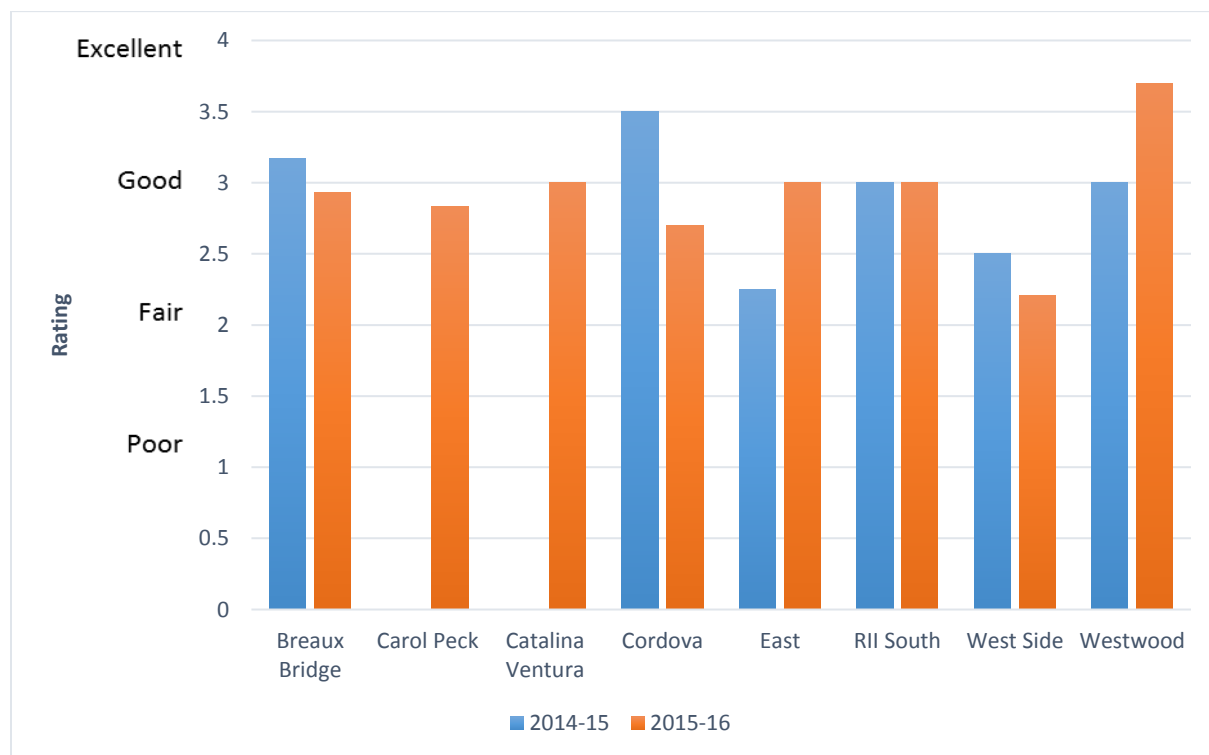


Table Notes:

(a) SFA school ratings were calculated by averaging teacher ratings for teachers in the same school.

(b) Due to redistricting, preschool students were relocated to two additional schools – Peck and Catalina Ventura – for their kindergarten year. ATC was implemented in these schools in 2015-16.

For 2014-15 the ratings ranged from 2.25 to 3.5; for 2015-16 the ratings ranged from 2.21 to 3.7.

Finally, snapshots and school visit reports were analyzed to understand differences in treatment and control classrooms. Snapshots and school visit reports demonstrated that treatment

schools made greater progress in their goals than did control schools. Although control schools experienced similar successes and challenges in program implementation as treatment schools, observers noted that treatment schools made greater progress in building on their successes and addressing their challenges than control schools. Observers noted that in treatment schools, students had become familiar with the routine of the ATC program; there was more cooperation and teamwork among students; teachers were providing positive reinforcement; and students seemed engaged in the content.

### **Conclusion**

In evaluating the two-year cumulative impact of the ATC program on young children's early reading skills, we found no statistically significant differences in early reading skills for ATC and control students on the confirmatory outcome measure. The findings of the impact study suggest that the evaluation study may have been underpowered and that the effect of ATC on some measures of early reading skills compared with the business-as-usual condition may be directionally positive on average but less than 0.20 standard deviations. More research is needed with larger sample sizes and lower minimally detectable effect sizes.

Another limitation of this study is that the business-as-usual condition consists of programs that are, at least in some ways, similar to the ATC intervention. Thus, the effect size of ATC may be much greater in a context where ATC participation is compared with a lower quality preschool or kindergarten program.

In the implementation study, we found that the ATC program was implemented with fidelity in both implementation years (2014-15 and 2015-16). Further, the data show that ATC improved home-to-school interactions and student engagement according to teachers and parents. The multimedia component in ATC afforded parents and teachers overlapping understandings of what children were learning. Parents reported that the home videos increased their child's engagement in school and reinforced what their child learned at school. The vast majority of teachers also believed that ATC benefitted students' language and literacy skills, although teachers held mixed opinions about to what extent. If proven to be replicable and generalizable in future studies, the overall results of this study, therefore, have educational significance by showing ATC to produce comparable achievement results to its already research-supported core programs (Curiosity Corner and KinderCorner) while potentially increasing student engagement and parental involvement in their children's education.



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## Appendix

This technical appendix includes the following tables:

- Table 2: Impact Table
- Table 3.A: Base Sample Sizes of Clusters
- Table 3.B: Base Sample Sizes of Students
- Table 4.A: Base Equivalence of Students
- Table 4.B: Base Equivalence of Clusters
- Table 5.1: Key Components of Intervention
- Table 5.2: Fidelity of Implementation of Intervention by Year

**Table 2: Impact Table**

| A             | B   | C                                | D                             | E                             | F                              | G                              | H                             | I                              | J                                | K                                | L               | M                                   | N                     | O       | P                                 | Q                  |
|---------------|---|----------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------|-------------------------------------|-----------------------|---------|-----------------------------------|--------------------|
| Contrast Id # | Contrast Name (Optional)                    | Post-test Measure Name           | Treatment Group N of Clusters | Treatment Group N of Students | Comparison Group N of Clusters | Comparison Group N of Students | Unadjusted Treatment Group SD | Unadjusted Comparison Group SD | Standard Deviation Source (Code) | Comparison Group Mean (Optional) | Impact Estimate | Standardized Effect Size (Optional) | Impact Standard Error | p-value | Code for Impact Model Description | Degrees of Freedom |
| C-WA-F-Y2     | Confirmatory-Word Attack-Full Sample-Year 2 | Woodcock-Johnson III Word Attack | 6                             | 276                           | 6                              | 272                            | 25.79                         | 24.59                          | A                                | 460.54                           | 2.50            | 0.10                                | 5.07                  | 0.622   | <b>B</b>                          | 1                  |

Table Notes:

- Model B is  $Y = \beta_0 + \beta_1(\text{Pretest}) + \beta_2(\text{ATC}) + \beta_3(\text{ELL}) + \beta_4(\text{ATC} \times \text{ELL}) + \beta_5(\text{Baseline Performance Level}) + \beta_6(\text{ATC} \times \text{Baseline Performance Level}) + \epsilon$ .
- The impact estimate is the adjusted mean difference (T-C).
- The standard errors and p-values were adjusted for clustering at the school level using a robust standard error estimate in SPSS.
- No adjustments were made for multiple comparisons given the single confirmatory contrast.

**Table 3.A: Base Sample Sizes of Clusters (Schools)**

|  |   | Contrast                                    |    |
|--|---|---|----|
|  |   | C-WA-F-Y2                                   |    |
|  |   | Confirmatory-Word Attack-Full Sample-Year 2 |    |
| Row #  |   | T   | C  |
| 1  | # of schools Randomized   | 6   | 6  |
| 2  | # of schools in Impact Analysis   | 6   | 6  |
| 3  | Difference (Row1-Row2)<br>[if difference = 0, skip to row 8 and enter "0" again. No need to indicate Reason for Loss] | 0   | 0  |
| 4  | Joiners included (Yes or No)  | No  | No |
| Reason for Loss (Evaluator lists reason for loss – add as many rows as needed <sup>a</sup> ) |   |   |    |
| 5  |   |   |    |
| 6  |   |   |    |
| 7  |   |   |    |
| 8  | Total Loss (Sum of "reasons for loss" rows -<br>This number should equal "Difference" shown in Row 3)                 | 0   | 0  |

<sup>a</sup> Most Reasons for Loss will be considered endogenous; if evaluator considers a reason for loss to be exogenous, enter sufficient information to explain why

**Table 3.B: Base Sample Sizes of Students**

|  |   | <b>Contrast</b>                                    |          |
|--|---|--|----------|
|  |   | <b>C-WA-F-Y2</b>                                   |          |
|  |   | <b>Confirmatory-Word Attack-Full Sample-Year 2</b> |          |
| <b>Row #</b>   |   | <b>T</b>   | <b>C</b> |
| 1  | # of students randomized <sup>a</sup>   | 435  | 390      |
| 2  | # of students in impact analysis <sup>a</sup>   | 276  | 272      |
| 3  | Difference (Row1-Row2)<br>[if difference = 0, skip to row 8 and enter "0" again. No need to indicate Reason for Loss] | 159  | 118      |
| 4  | Joiners included (Yes or No)  | No   | No       |
| <b>Reason for Loss (Evaluator lists reason for loss – add as many rows as needed<sup>b</sup></b> |   |  |          |
| 5  |   |  |          |
| 6  |   |  |          |
| 7  |   |  |          |
| 8  | Total Loss (Sum of "reasons for loss" rows -<br>This number should equal "Difference" shown in Row 3)                 | 159  | 118      |

<sup>a</sup> In studies with randomization of clusters and no joiners, the numbers in this table should reflect only the counts of students in non-attrited clusters.

<sup>b</sup> Most Reasons for Loss will be considered endogenous; if evaluator considers a reason for loss to be exogenous, enter sufficient information to explain why

**Table 4.A: Baseline Equivalence of Students**

| A             | B   | C                     | D                 | E                  | F                             | G                              | H                                | I                                | J                                 | K                                      | L  | M                                   |
|---------------|---|-----------------------|-------------------|--------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------------------------|--|--|-------------------------------------|
| Contrast ID # | Contrast Name (Optional)                    | Pre-test Measure Name | Treatment Group N | Comparison Group N | Unadjusted Treatment Group SD | Unadjusted Comparison Group SD | Standard Deviation Source (Code) | Comparison Group Mean (Optional) | Treatment – Comparison Difference | Standardized T-C Difference (Optional) | Pre-test shown in this row was used as a control in the impact model for this contrast ? (Y/N) | Code for T-C Difference Calculation |
| C-WA-F-Y2     | Confirmatory-Word Attack-Full Sample-Year 2 | PPVT-III              | 276               | 272                | 17.56                         | 19.05                          | A                                | 89.27                            | 1.27                              | 0.07                                   | Y  | B                                   |

**Table 4.B: Baseline Equivalence of Clusters**

| A             | B   | C                     | D                 | E                  | F                             | G                              | H                                | I                                | J                                 | K                                      | L  | M                                   |
|---------------|---|-----------------------|-------------------|--------------------|-------------------------------|--------------------------------|----------------------------------|----------------------------------|-----------------------------------|--|--|-------------------------------------|
| Contrast ID # | Contrast Name (Optional)                    | Pre-test Measure Name | Treatment Group N | Comparison Group N | Unadjusted Treatment Group SD | Unadjusted Comparison Group SD | Standard Deviation Source (Code) | Comparison Group Mean (Optional) | Treatment – Comparison Difference | Standardized T-C Difference (Optional) | Pre-test shown in this row was used as a control in the impact model for this contrast ? (Y/N) | Code for T-C Difference Calculation |
| C-WA-F-Y2     | Confirmatory-Word Attack-Full Sample-Year 2 | PPVT-III              | 6                 | 6                  | 9.54                          | 12.82                          | D                                | 92.08                            | 0.22                              | 0.02                                   | Y  | B                                   |

**Table 5.1: Description of Key Components**

| <b>Planned Intervention Activity:</b><br>All <i>key components</i> measured across years of implementation | <b>List of Key Indicators For Each Key Component</b>   |
|--|--|
| Train SFA Coaches on new media   | Coach receives 4 hours of training on use of enhanced media components in each implementation year.  |
| Teacher Professional Development   | Pre-K teachers receive 6-12 hours of initial professional development and a minimum of three classroom observation and feedback visits in 2014-15.<br>K teachers receive 1-4 hours of PD and 2-4 classroom observation and feedback visits in 2015-16. |
| Communication meetings for principals and facilitators   | Principals receive 3-4 communication visits in 2014-15.<br>Principals receive 2-4 communication visits in 2015-16.   |
| Distribution of ATC Materials  | Each Pre-K (2014-15) and K (2015-16) teacher receives a full set of lesson materials and technology equipment in each implementation year.   |

Table 5.2: Fidelity of Implementation of Intervention by Year

| <b>Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 1</b> |   |   |   |   |   |   |  |
|---|---|---|---|---|---|---|--|
| <b>Enter calendar year: 2014-2015 School Year</b>                             |   |   |   |   |   |   |  |
| <b>Intervention Components:<br/>Copy from list above</b>                      | <b>Implementation measure (total number of measurable indicators representing each component)</b> | <b>Sample Size at the Sample Level (# of schools, districts, etc)</b> | <b>Representativeness of sample: Measured on All (A), Some (S), or None (N) of the units representing the intervention group in the impact analyses<sup>b</sup></b> | <b>Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level</b>   | <b>Evaluator's Criteria for "Implemented with Fidelity" at Sample Level</b> | <b>Component Level Fidelity Score for the Entire Sample</b> | <b>Implemented with Fidelity? (Yes, No, N/A)</b> |
| <b>Planned Intervention Activities [i.e., key components]</b>                 |   |   |   |   |   |   |  |
| Train SFA Coaches on new media  | 1 Indicator   | All coaches within 6 Schools  | A   | High participation at coach-level = 4 hours of training on use of enhanced media components<br><br>High participation at school-level = 80-100% of coaches with high participation  | At least 90% of schools with high participation                             | 100%  | Yes  |
| Teacher Professional Development  | 1 Indicator (Note: definition differs between Year 1 and Year 2)                                  | All pre-k teachers within 6 Schools                                   | A   | High participation at teacher-level = 6-12 hours of initial professional development and a minimum of three classroom observation and feedback visits<br><br>High participation at the school-level = 80-100% of teachers with high participation | At least 90% of schools with high participation                             | 100%  | Yes  |
| Communication meetings for principals and facilitators                        | 1 Indicator (Note: definition differs between Year 1 and Year 2)                                  | Principals within 6 pre-k Schools                                     | A   | High participation at the school-level = High participation at the principal-level = Principal receives 3-4 "communication visits"  | At least 90% of schools with high participation                             | 100%  | Yes  |
| Distribution of ATC Materials   | 1 Indicator   | Pre-K teachers within 6 Schools                                       | A   | High participation at the teacher-level = receives a full set of lesson materials and technology equipment  | At least 90% of schools with high participation                             | 100%  | Yes  |



| <b>Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 1</b> |   |   |   |   |   |   |  |
|---|---|---|---|---|---|---|--|
| <b>Enter calendar year: 2014-2015 School Year</b>                             |   |   |   |   |   |   |  |
| <b>Intervention Components:<br/>Copy from list above</b>                      | <b>Implementation measure (total number of measurable indicators representing each component)</b> | <b>Sample Size at the Sample Level (# of schools, districts, etc)</b> | <b>Representativeness of sample: Measured on All (A), Some (S), or None (N) of the units representing the intervention group in the impact analyses<sup>b</sup></b> | <b>Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level</b> | <b>Evaluator's Criteria for "Implemented with Fidelity" at Sample Level</b> | <b>Component Level Fidelity Score for the Entire Sample</b> | <b>Implemented with Fidelity? (Yes, No, N/A)</b> |
|   |   |   |   | High participation at the school-level = 80-100% of teachers with high participation                                |   |   |  |

**Table 5.2 (Continued): Fidelity of Implementation of Intervention by Year**

| <b>Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 2</b> |   |   |   |  |   |   |  |
|---|---|---|---|--|---|---|--|
| <b>Enter calendar year: 2015-2016 School Year</b>                             |   |   |   |  |   |   |  |
| <b>Intervention Components:<br/>Copy from list above</b>                      | <b>Implementation measure (total number of measurable indicators representing each component)</b> | <b>Sample Size at the Sample Level (# of schools, districts, etc)</b> | <b>Representativeness of sample: Measured on All (A), Some (S), or None (N) of the units representing the intervention group in the impact analyses<sup>b</sup></b> | <b>Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level</b>  | <b>Evaluator's Criteria for "Implemented with Fidelity" at Sample Level</b> | <b>Component Level Fidelity Score for the Entire Sample</b> | <b>Implemented with Fidelity? (Yes, No, N/A)</b> |
| <b>Planned Intervention Activities [i.e., key components]</b>                 |   |   |   |  |   |   |  |
| Train SFA Coaches on new media  | 1 Indicator   | All coaches within 6 Schools  | A   | High participation at coach-level = 4 hours of training on use of enhanced media components<br><br>High participation at school-level = 80-100% of coaches with high participation   | At least 90% of schools with high participation                             | 100%  | Yes  |
| Teacher Professional Development  | 1 Indicator (Note: definition differs between Year 1 and Year 2)                                  | All K teachers within 6 Schools                                       | A   | High participation at teacher-level = 1-3 hours of initial professional development and a minimum of three classroom observation and feedback visits<br><br>High participation at the school-level = 80-100% of teachers with high participation | At least 90% of schools with high participation                             | 100%  | Yes  |
| Communication meetings for principals and facilitators                        | 1 Indicator   | Principals within 6 Schools   | A   | High participation at the school-level = High participation at the principal-level = Principal receives 2-4 "communication visits"   | At least 90% of schools with high participation                             | 100%  | Yes  |
| Distribution of ATC Materials   | 1 Indicator   | K teachers within 6 Schools   | A   | High participation at the teacher-level = receives a full set of lesson materials and technology equipment   | At least 90% of schools with high participation                             | 100%  | Yes  |

| <b>Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 2</b> |   |   |   |   |   |   |  |
|---|---|---|---|---|---|---|--|
| Enter calendar year: 2015-2016 School Year                                    |   |   |   |   |   |   |  |
| <b>Intervention Components:<br/>Copy from list above</b>                      | <b>Implementation measure (total number of measurable indicators representing each component)</b> | <b>Sample Size at the Sample Level (# of schools, districts, etc)</b> | <b>Representativeness of sample: Measured on All (A), Some (S), or None (N) of the units representing the intervention group in the impact analyses<sup>b</sup></b> | <b>Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level</b> | <b>Evaluator's Criteria for "Implemented with Fidelity" at Sample Level</b> | <b>Component Level Fidelity Score for the Entire Sample</b> | <b>Implemented with Fidelity? (Yes, No, N/A)</b> |
|   |   |   |   | High participation at the school-level = 80-100% of teachers with high participation                                |   |   |  |