The African proverb: “It takes a village to raise a child” has a clear message—a nurturing community is vital to the development of all children in addition to the critical role that parents and family members play in a child’s education. It is in this spirit that the Family Resource Centers (FRCs), Literacy Volunteers of Central Connecticut (LVCC), and the public libraries in Greater New Britain, Connecticut (herewith to be referred as the Coalition) banded together to form a coalition of resources and services aimed at expanding opportunities in developing children’s emergent literacy as well as promoting a positive disposition toward reading among parents of these children.

The Coalition is composed of the Plainville Family Resource Center and Plainville Adult and Continuing Education, Family Resource Centers of the Consolidated School District of New Britain, Family Resource Center of Southington, the public libraries of New Britain, Plainville, and Southington, and the Literacy Volunteers of Central Connecticut (LVCC). Together, with funding support through a grant from the Community Foundation of Greater New Britain, Connecticut, the Coalition embarked on an early literacy project with families and their preschool children for the purposes of 1) scaffolding children’s emergent literacy development, particularly their concepts about print and vocabulary development, and 2) fostering parents’ positive disposition toward reading as learning (efferent) and recreational (aesthetic) activities. The project provided parents with an e-reader (Kindle) and access to e-books and apps that are appropriate for preschoolers and for adults. To determine the extent of the project’s impact on preschoolers’ emergent literacy development, and parents’ disposition toward reading, the Coalition hired an external evaluator to assess the following:

**Feature Articles**

Children’s Early Literacy Development and Adults’ Positive Disposition Toward Reading Through E-books and Apps

Lauren Boudo  
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Donna Cavallaro  
*Plainville Family Resource Network, CT*

Darlene Hurtado  
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*Adult and Continuing Education in Plainville, CT*

Kimberly Lawther Jackson  
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Peter Chase  
*Plainville Public Library, Plainville, CT*

Krista Ricciardi Pisano  
*Family Resource Center of Southington, CT*

Pat Rutkowski  
*New Britain Public Library, New Britain, CT*

Susan Smayda  
*Southington Library & Museum, CT*
1. To what extent can e-readers, e-books, and apps scaffold preschoolers’ concepts about print and vocabulary development?

2. To what extent can e-readers, e-books, and apps foster parents’ disposition toward reading as learning (effector) and recreational (esthetic) activities? Do they read more and frequently to their children?

3. To what extent can e-readers, e-books, and apps increase parents’ level of reading engagement (motivation)? Do they read more?

The Community Foundation of Greater New Britain was particularly enthusiastic about this project given its keen interest in early childhood development. The grant was consistent with the Foundation’s signature initiative, First Years First, a long-term investment in programming and community-wide collaboration to prepare young children for success in school and in life. The Coalition’s project incorporated activities to improve learning for both young children and their parents, a goal shared by both the Community Foundation and the Christine E. Moser Foundation, which also supported this project. Both funders have an interest in strengthening family literacy, especially among those who are low-income and have low literacy.

**Background of the Project**

There is extensive evidence on the positive impact of parental engagement on children’s literacy development. Research has shown that parents’ levels of engagement and disposition toward reading powerfully impact their children’s literacy development. The development of literacy skills is directly influenced by the frequency and quality of children’s exposure to home literacy events (Jordan, Snow, & Porche, 2000). Further, research supports the notion that a literate home environment is one of the most effective approaches to developing in young children a love for reading and writing (Rasinski & Frederick, 1991). When parents provide children with a home environment that supports literacy, children’s literacy skills development is strongly facilitated and enhanced. In fact, research has been consistent in reporting the positive impact of family and community involvement in children’s literacy learning (Van Voorhis, Maier, Epstein, Lloyd, & Leung, 2013).

Research also tells us that parent involvement in early literacy is directly connected to academic achievement (Washington, 2001). The greater the parent involvement in their children’s early literacy development, the greater the children’s potential for successful academic performance (Scribner, Young, & Pedroza, 1999; Snow, Burns, & Griffin, 1998), including positive social and emotional development (Fantuzzo & McWayne, 2002). Vygotsky’s (1978) sociocultural theory explains how a robust social environment such as in a home environment can help a child learn and develop concepts; in this case, contribute to children’s development of language and literacy. Consequently, there is a great need for effort focused on training parents to teach specific oral, reading and writing skills to their children. Successful and effective programs require ongoing support, monitoring and development (Cronan, Cruz, Arriaga, & Sarkin, 1996).

A new dimension of family literacy also has been evolving. According to the Common Core State Standards (CCSS) (National Governors Association Center for Best Practices and Council of the Chief State School Officers, 2010) a literate person in the 21st century should be able to use technology and other digital media strategically and capably. Hence, starting at kindergarten children are now expected to use a variety of digital tools, which suggests that those children who have not had experience with digital media at home are already disadvantaged. Besides, motivation to read is an essential element for actively engaging young children in the reading process and a strong predictor of later reading skills (Scarborough & Dobrich, 1994). Research tells us that technology is not only motivating, but through its use, literacy learning can be enhanced (Hansen, 2008). A study conducted by Penuel et al. (2009) demonstrates that with guidance and support, technology experiences are associated with better language and literacy outcomes, such as letter recognition, sequencing, and sounds; listening and comprehension; vocabulary; and understanding concepts about stories and print. Children are able to interact with books that include visuals and sounds, creating deeper meaning. Roschelle, Pea, Hoadley, Gordin, and Means (2000) found that scores in reading comprehension, vocabulary, fluency, and achievement increased after young children interacted with technology. Mouza (2005) adds that technology supports children’s cognitive development in several ways including learning by doing and helping students visualize difficult concepts.

In the past years technological devices have changed dramatically. Today, there is a proliferation of electronic media—e-readers, e-books, iPads, digital cameras, smart toys, and smartphones—that can be harnessed as a tool for supporting children’s literacy development. While research is not conclusive about impacts of electronic media on children’s literacy learning, it is safe to suggest that there are some significant positive impacts on children’s learning in general, and literacy learning in particular. For example, Penuel et al. (2009) found that children who use electronic media learn more in the short term. Bus and Neuman’s (2008) book on *Multimedia and Literacy Development: Improving Achievement for Young Learners* highlights research that shows positive impact of using e-books in young children’s literacy learning, including their phonological awareness skills.
Specifically, research on the use of digital storybooks shows promise in providing parents and children the opportunity to actively engage in literacy regardless of reading ability. Warren (2010) discusses digital novels, which can combine text, audio, video, special effects and gaming. The interactive features embedded within these digital storytelling tools result in an increased sense of users’ control of the direction they take within these information contexts, as well as higher levels of intrinsic motivation (Leu, 2000). The interactivity of e-books is especially appealing to young readers. In Zero to Eight: Children’s Media Use in America researchers found that more than half of young children (infants, toddlers) use digital media twice as much as they read traditional books. Electronic books might, therefore, have the power to bridge the gap between print and other media.

Preparing young children for the 21st century can be daunting given the increasing demands and expectations of our technology-driven society. It was troubling then, when the Carnegie Foundation’s Ready to Learn: A Mandate for the Nation reported that 35% of kindergarten children were not ready for school, particularly in the areas of literacy and language skills (Boyer, 1991), and when research concurred that children who start kindergarten without the basic language and literacy skills have difficulty learning to read, and they continue to experience reading problems throughout school (Snow, Burns, & Griffin, 1998). Today, the expanded definition of literacy, which includes digital literacy, exacerbates the challenges we face in ensuring that all our young children are school-ready. Nevertheless, as we move further into the digital age, it seems sensible that young children develop the early “technology-handling” skills associated with early digital literacy that are akin to the “book-handling” skills associated with early literacy development (National Institute for Literacy, 2008). The years between 3 and 5 are especially critical for children’s long-term development.

The Coalition Project
The Coalition project was conceptualized as an avenue to support parents in supporting their children’s literacy development. At the same time, the project sought to explore practices and support that parents can easily use at home, and would contribute to the success of their children’s literacy development. As a result, the project was developed based on the beliefs we hold regarding children’s early literacy development, parental involvement in children’s literacy development, and the role of digital media in children’s literacy development.

1. We believe that children whose early encounters with literacy are enjoyable are more likely to develop a predisposition and inclination toward reading for learning and for fun.
2. We believe that parents who have positive disposition toward reading set the stage for their children’s positive attitudes toward reading, resulting in their reading interest and motivation.
3. We believe that active and ongoing parental engagement in their children’s literacy development significantly contributes to these children’s literacy development.
4. We believe that digital media, when appropriately used, can enhance children’s literacy development. A corollary to this belief has to do with the increasing demands for digital literacy in schools: We believe that children who are already digitally literate at the start of schooling are advantaged; those who are not, are disadvantaged.

The project began with specific goals in mind: 1) To provide opportunities for parents to support their children’s emergent literacy development, particularly their concepts about print and vocabulary development, and 2) to foster parents’ positive disposition toward reading.

In collaboration with the Connecticut public libraries and the Literacy Volunteers of Central Connecticut (LVCC), the Family Resource Centers (FRCs) determined that each FRC would incorporate Kindle e-readers into their parent education programs to encourage parents to increase their literacy activity time with their children at home. They worked together to select an appropriate Literacy Bookshelf that was downloaded on each Kindle e-reader. The Literacy Bookshelf included interactive book apps as well as e-books for children and self-help books for adults.

The FRCs recruited from their programs parents who have preschool children to participate in the project, a total of 71 parents and 71 children. Each FRC was responsible for providing the parents with orientation and training sessions focusing on the project goals and expectations, and the commitment to participate in the project to the end. At these sessions, parents received a Kindle, were introduced to features they may find on the e-book reader—Internet access, apps with activities to enhance the book experience such as sound effects, embedded links, and ability to download Kindle-compatible e-books from the libraries—and the basics of navigating the Kindle such as by using the Table of Contents links, including quick hints, and helpful tips. Some parents met with an FRC staff in one-on-one meetings and were taught how to interact with their child/children through the use of e-books. In some sessions FRC staff demonstrated how to use the e-reader and modeled “storytime behavior” including tips on how to encourage the child to talk about the pictures or the story; how to point out individual words; and the importance of encouraging the child to repeat the words to favorite stories or to “read” the book on his/her own. Parents were provided instructions on how to keep
track of the number of books read and new vocabulary learned. They also learned how to use the e-readers for their own reading. Finally, parents were provided with a list of e-books for children and for their own reading that are available on the Kindle. The project commenced in February 2013 and ended in June 2013.

There were three phases to the project throughout its implementation. During the first phase the external evaluator conducted pre-assessments of both parents and children using a two-part Family Literacy Survey for the parents, and the Concepts About Print Test for children ages 1 through 7. The first part of the Family Literacy Survey provides demographic information about the parents—ethnicity, age, educational attainment, spoken language(s); dispositions toward reading, level of reading engagement (motivation to read), perception of themselves as reader; and access to information technology and skill of usage. The second part of the Family Literacy Survey focuses on the child/ren, which includes the parent perception about the child as a reader, child’s reading habits, and reading preferences; number of books and frequency children are read to by adults at home; and access to information technology and skill of usage. Marie Clay’s (1985) Concepts About Print Test was utilized to determine a child’s print awareness and book handling skills. This assessment identifies what a child knows about book orientation/lay out, meaning of print, directional rules, important reading terminology (i.e., letter, word, beginning), as well as simple punctuation marks. Seventy-one (71) parents responded to the Family Literacy Survey, and 71 children completed the Concepts About Print Test.

The second phase was the implementation phase. Parents were instructed to use their Kindle and other strategies to support their young children’s literacy development at home. They had to complete reading logs, which the FRCs regularly collected throughout the program. The reading logs provided information about titles of books in Kindle that the parents read or read to the child, including the number of times they might have re-read the book. The books that were read to children frequently were used to identify concept/vocabulary words for assessment purposes. The logs were also used to confirm the parents’ responses in the Family Literacy Survey specific to their disposition toward reading as learning (effferent) and recreational (aesthetic) activities; parents’ level of reading engagement (motivation to read), and number of books and the frequency children are read to by adults at home.

The third and final phase included post-assessments of parents and children using the two-part Family Literacy Survey for the parents, and the Concepts About Print Test for children. However, adjustments were made in the implementation of and expected response to the Concepts About Print Test to accommodate using an e-reader (Kindle) instead of traditional (paper copy) book. For example, instead of asking the child “Show me the front of the book” or “Show me the back of the book” we asked: “Show me the beginning page of the e-book” or “Show me the ending page of the e-book.” The child is also expected to show the “flowing” nature of the text in an e-book. In addition, children were given a concepts/vocabulary assessment using concepts/vocabulary from books that were frequently accessed from Kindle based on the reading logs. Finally, an exit interview with selected adult participants from each FRCs was completed. Fifty-four (54) parents responded to the Family Literacy Survey, 54 children completed the modified Concepts About Print Test, and six parents were interviewed.

The Effectiveness of the Coalition Project
In analyzing the pre and post assessment data for the purpose of comparing results and presenting comparison data tables, with the exception of the demographic data, only the respondents to both the pre and post assessments were included. Hence, the n is the same for both the pre and post assessments.

Demographic Information
Demographic profiles of parents were created based on information drawn from the Family Literacy Survey. There is a range of diversity among the adult participants regarding ethnicity, age, and educational attainment (Table 1). A high percentage of parents are White; they are between 30-39 years old; and they hold a high school diploma or a college degree. Majority of families speak English at home. There are at least two adults living at home.

Specifically, 30-39 year-old adult participants are Black/African American (80%/80%), Asian (70%/73%), and White (67%/65%). A high percentage of Hispanic/Latino parents (58%/71%) are between 20-29 years old. In regard to educational attainment, 25%/43% of Hispanic/Latino parents have reached high school, and 25%/14% are high school graduates. A high percentage of Black/African American parents are high school graduates (60%/60%), followed by 40%/40% of adults at college level. Among White parents 36%/35% have college degrees, and 33%/35% are high school graduates. Among Asian parents 42%/47% have reached post-college level, and 32%/27% are college graduates.

English is the dominant language spoken at home by White (71%/74%), (Black/African American (67%/67%), and Asian (52%/54%) parents. Spanish is the dominant language spoken at home by Hispanic/Latino (50%/54%) parents, followed by English (50%/46%). There are other languages spoken at home by Asian (48%/46%) and White (21%/19%) parents; Spanish is the second dominant language spoken at home by Black/African American (33%/33%) parents.
A number of families have at least two adult members living at home: Asian (89%/86%), Hispanic/Latino (83%/86%), White (79%/81%), and Black/African American (60%/60%).

Parents’ Disposition Toward Reading, Level of Reading Engagement, and Skill in Using Information Technology

Based on parents’ responses to the survey we observed a positive shift in parents’ disposition toward reading, level of reading engagement (motivation), and skill in using information technology.

Overall, parents prefer reading fiction (37%/43%) and nonfiction (39%/57%), with an increase of 6% for fiction and 18% for nonfiction. Among ethnic groups, 100% of White parents now prefer reading nonfiction (an increase of 49%); 100% of Hispanic/Latino parents now prefer reading fiction (an increase of 67%); 75% of Asian parents now prefer nonfiction (an increase of 48%). Majority of parents indicate that they read because they want to (80%/86%), with a 6% increase in their self-motivation to read. Among ethnic groups, 81% White (9% increase), 88% Hispanic/Latino (10% increase), and 100% Asian (7% increase) parents read because they want to. Initially, 100% of Black/African parents read because they want to but this dropped to 67% at end of program (33% decrease); 33% of parents read because it’s part of the job (33% increase).

There is an increase in amount of books parents read in past week: 3-5 books (10% increase), 6-10 books (20% increase), and more than 10 books (12% increase). Among ethnic groups, Black/African American parents read 6-10 books (40% increase) and more than 10 books (20% increase); Hispanic/Latino parents read 6-10 books (43% increase) and more than 10 books (29% increase); White parents read 3-5 books (15% increase) and more than 10 books (27% increase); and Asian parents read 6-10 books (40% increase) and more than 10 books (6% increase).

Most parents own a library card (80%/85%), with
a 5% increase, and while percentage of parents visiting the library every week remains the same (41%), there is a 13% increase of parents visiting the library once a month (22%/35%). Among ethnic groups, there is a 20% increase of Black/African parents who own a library card, and 20% increase of parents who visit the library every week (20%/40%); percentage of parents who visit the library once a month remains the same (40%/40%).

A high percentage of parents describe themselves as a good reader (68%/76%), with an 8% increase. Among ethnic groups, 100% of Black/African American parents (20% increase) and Hispanic/Latino parents (14% increase) describe themselves as a good reader; 81% of White parents describe themselves as a good reader (8% increase); percentage of Asian parents who describe themselves as good reader remain the same (47%), 53% of parents are not sure if they are "good" or "poor" reader (13% increase).

Parents are skillful in using electronic tablets (46%), specifically Kindle (66%), with 20% increase. Among ethnic groups, percentage of Black/African American parents who are skillful in using electronic tablets and/or Kindle remains the same (80%); there is a 33% increase for Asian (60%/93%), 28% increase for Hispanic/Latino (29%/57%), and 12% increase for White (38%/50%) parents.

Parents' Perception Regarding Their Child's Disposition Toward Reading, Level of Reading Engagement, and Skill in Using Information Technology

Parents observed an increase in their children's interest and motivation to read and their level of reading engagement, especially using the e-reader.

Children enjoy reading or being read to using traditional books (83%) and/or Kindle (61%). Parents report that their child read a book on his/her own using Kindle (76%). Among ethnic groups, a high percentage of Black/African American children enjoy reading traditional books or books in Kindle (80%/100%), with a 20% increase by using Kindle; when using Kindle, percentage of children who enjoy reading occasionally increased by 27% for White children (19%/46%), by 29% for Hispanic/Latino children, and by 20% for Asian children (13%/33%). In past week, using Kindle, parents read 3-5 books (33%) and 6-10 books (24%) to their child. White parents read to their child 3-5 books (23%), 1-2 books (23%), 6-10 books (15%), and none at all (31%); Black/African American parents read to their child more than 10 books (20%), 6-10 books (20%), 3-5 books (20%), and none at all (40%); Hispanic/Latino parents read to their child 3-5 books (57%) and 6-10 books (43%); and Asian parents read to their child 3-5 books (47%) and 6-10 books (27%).

Parents read to their child everyday in a typical week using traditional books; this decreased by 44% when using Kindle (70%/26%). However, since using Kindle, in a typical week there has been a 17% increase of parents who read to their child 1-2 days (4%/21%), a 10% increase of parents who read to their child 3-4 days (13%/23%), and a 15% increase of parents who read to their child 5-6 days (13%/28%). Among ethnic groups, in a typical week since using Kindle, there has been a 57% increase of Hispanic/Latino parents who read to their child 5-6 days (0%/57%), and a 43% increase of Hispanic/Latino parents who read to their child 3-4 days (0%/43%); a 20% increase of Asian (20%/40%) and Black/African American (0%/20%) parents who read to their child 3-4 days; and a 20% increase of White parents who read to their child 5-6 days (12%/32%).

Children prefer fiction (46%/45%), nonfiction (25%/23%), and poetry (rhymes) (17%/20%). Among ethnic groups, White children prefer fiction (49%/40%), nonfiction (25%/24%), and poetry (17%/24%); Black/African American children prefer fiction (33%/63%), nonfiction (20%/13%), and poetry (20%/25%); Hispanic/Latino children prefer fiction (54%/47%), nonfiction (31%/20%), and comics (8%/27%); and Asian children prefer fiction (47%/50%), nonfiction (23%/25%), and poetry (17%/14%).

Parents take their child to the library (80%/87%). Among ethnic groups, a high percentage of White (88%/92%), Black/African American (80%/100%), Hispanic/Latino (71%/86%), and Asian (67%/73%) parents take their child to the library.

Children are skillful in using Kindle (74%); 58% White, 100% Black/African American, 57% Hispanic/Latino, and 100% Asian children are skillful in using Kindle.

Children's Literacy Development

Concepts about print. From traditional books to using Kindle, all groups of children demonstrated an increase in their knowledge and understanding of the following concepts about print (Table 2):

1. Print tells a story: White by 23%, Black/African American by 20%, Asian by 13%, and Hispanic/Latino by 14%
2. Directional Rule: White by 27%, Black/African American by 20%, Asian by 46%, and Hispanic/Latino by 28%
3. Return Sweep: White by 39%, Black/African American by 40%, and Asian by 6%.
4. 1:1 Correspondence: White by 153%, Black/African American by 20%, Asian by 7%, and Hispanic/Latino by 14%
5. 1 Letter Recognition: White by 313%, Black/African American by 620%, Asian by 53%, and Hispanic/Latino by 43%
6. 1 Word Recognition: White by 4% and Hispanic/Latino by 14%
7. First Letter Recognition: White by 27%, Black/African American by 40%, Asian by 20%, and Hispanic/Latino by 14%
8. Last Letter Recognition: White by 7%, Black/African American by 40%, and Asian by 7%
9. Recognition of Punctuation: White by 12%, Black/African American by 40%, Asian by 3%, and Hispanic/Latino by 14%

However, the percentage of children across groups who know and understand Orientation/Book Layout decreased: White children by 15%, Asian children by 20%, and Hispanic/Latino children by 29%. Percentage of Black/African American children who know and understand Orientation/Book Layout and 1 Word remained at 60%; percentage of Hispanic/Latino children who know and understand Return Sweep decreased by 15%; percentage of Hispanic/Latino children who recognize Last Letter remained at 14%; and percentage of Asian children who know and understand 1 Word decreased by 7%.

Vocabulary development. Key observations regarding children’s vocabulary development indicate positive impact of using e-reader to promote vocabulary development (Table 3).

- Overall, 44% of children can tell or show what the concept/vocabulary words mean; 30% of children can use the concept/vocabulary words in a sentence; and 22% of children can read the concept/vocabulary words.
- Overall, among age groups, children ages 6-7 performed the best in telling or showing what the concept/vocabulary words mean (86%); followed by children ages 3-5 (60%); and children ages 1-2 (17%). Children ages 6-7 performed the best in using the concept/vocabulary words in a sentence (79%); followed by children ages 3-5 (44%); and children ages 1-2 (6%). Children ages 6-7 performed the best in reading concept/vocabulary words (64%); followed by children ages 3-5 (33%); and children ages 1-2 (2%).
- Overall, among ethnic groups, Black/African American children performed the best in telling or showing what the concept/vocabulary words mean; followed by Asian children (20%); and Hispanic/Latino children (14%).

## Table 2
**Concepts About Print**

<table>
<thead>
<tr>
<th>CONCEPTS ABOUT PRINT</th>
<th>RESPONSE</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Pre-Assessment (traditional book)</strong></td>
<td>Post-Assessment (using Kindle)</td>
</tr>
<tr>
<td>Orientation/Book Layout</td>
<td>n=54</td>
<td>n=54</td>
</tr>
<tr>
<td>Front of book (Beginning)</td>
<td>63%</td>
<td>48%</td>
</tr>
<tr>
<td>Back of book (Ending)</td>
<td>63%</td>
<td>48%</td>
</tr>
<tr>
<td>Print Tells Story</td>
<td>61%</td>
<td>80%</td>
</tr>
<tr>
<td>Point to pictures</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Point to words</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Directional Rule</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Where do I begin to read?</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Where do I go next?</td>
<td>31%</td>
<td>63%</td>
</tr>
<tr>
<td>Return Sweep</td>
<td>22%</td>
<td>46%</td>
</tr>
<tr>
<td>After reading; where do I go?</td>
<td>22%</td>
<td>46%</td>
</tr>
<tr>
<td>1:1 Correspondence</td>
<td>13%</td>
<td>26%</td>
</tr>
<tr>
<td>Point as I read</td>
<td>13%</td>
<td>26%</td>
</tr>
<tr>
<td>1 Letter</td>
<td>33%</td>
<td>76%</td>
</tr>
<tr>
<td>Can you point to a letter?</td>
<td>33%</td>
<td>76%</td>
</tr>
<tr>
<td>1 Word</td>
<td>30%</td>
<td>31%</td>
</tr>
<tr>
<td>Can you point to a word?</td>
<td>30%</td>
<td>31%</td>
</tr>
<tr>
<td>First Letter</td>
<td>19%</td>
<td>44%</td>
</tr>
<tr>
<td>Where’s the first letter?</td>
<td>19%</td>
<td>44%</td>
</tr>
<tr>
<td>Last Letter</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>Where’s the last letter?</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>Punctuation</td>
<td>19%</td>
<td>30%</td>
</tr>
</tbody>
</table>
words mean (73%); followed by White children (46%); then Asian children (39%); and Hispanic/Latino children (24%). Black/African American children performed the best in using the concept/vocabulary words in a sentence (67%); followed by White children (31%); then Asian children (29%); and Hispanic/Latino children (4%). Black/African American children performed the best in reading concept/vocabulary words (46%); followed by White children (23%); then Asian children (219%); and Hispanic/Latino children (6%).

A high percentage of boys can tell or show what the concept/vocabulary words mean (46%); can use the concept/vocabulary words in a sentence (34%); and can read concept/vocabulary words (34%).

A high percentage of girls can tell or show what the concept/vocabulary words mean (41%); can use the concept/vocabulary words in a sentence (26%); and can read concept/vocabulary words (20%).

DISCUSSION and CONCLUSIONS
An exit interview with six selected adult participants from participating FRCs was undertaken to assist in understanding the extent to which the project was implemented at home as well as to provide a forum for parents to share their perceptions, questions, concerns, and suggestions regarding the project. Although parent sampling is limited, the exit interview represents evidence of the value-added effects of e-readers, e-books, and apps in scaffolding preschoolers’ emergent literacy development, specifically, their concepts about print and vocabulary development, as well as improving parents’ disposition toward reading as learning (effecent) and recreational (aesthetic) activities, level of reading engagement (motivation).

During interview parents underscored their child’s increased interest and motivation for reading because of the e-reader. In fact, one of the parents told this story: She and her child were at a bookstore and her child saw a hard copy of a book about bears that she has been reading to her using Kindle. The child insisted on buying the book, which she did. Another parent found that once her child became familiar with the interactive features of books in Kindle, the child wanted to do nothing more but to access all of the interactive books and play with their interactive features. The parents agreed that an e-reader such as Kindle definitely could assist in their child’s learning to read and building vocabulary. One of the parents described how her child was so excited to use the new words learned during their conversation. Parents also indicated their willingness to invest in an e-reader to support their children’s reading development.

Parents also offered a few recommendations such as providing additional training in using e-readers, e-books, apps, and traditional books with children. They also expressed the desire for more variety of e-books, especially interactive, in Kindle; they noted that the novels included for adult reading are not of high interest and/or within their reading level.

It appears that parents are cognizant of the merits of e-readers, e-books, and apps in supporting their children’s literacy development. They also recognize the value of having a positive disposition toward reading on motivating their children to read. While we cannot generalize about the impact of e-readers, e-books, and apps on children’s literacy development as well as adults’ disposition toward reading and levels of reading engagement, the conclusions presented here are deemed to be reasonable inferences from findings from the assessments and observations of the project.

• Immersing preschool children in e-readers, e-books, and apps help improve their concepts about print. Development of children’s concepts about print during preschool years is critical to their later reading success. Preschool

<table>
<thead>
<tr>
<th>CONCEPTS/VOCABULARY</th>
<th>Overall N=54</th>
<th>Boys N=32</th>
<th>Girls N=22</th>
<th>Ages 1-2 N=23</th>
<th>Ages 3-5 N=27</th>
<th>Ages 6-7 N=4</th>
<th>White N=26</th>
<th>African American N=5</th>
<th>Hispanic N=7</th>
<th>Asian N=15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can you read the word? (if no, teacher reads)</td>
<td>22%</td>
<td>24%</td>
<td>20%</td>
<td>2%</td>
<td>33%</td>
<td>64%</td>
<td>23%</td>
<td>46%</td>
<td>6%</td>
<td>21%</td>
</tr>
<tr>
<td>What does it mean? (tell or show)</td>
<td>44%</td>
<td>46%</td>
<td>41%</td>
<td>17%</td>
<td>60%</td>
<td>86%</td>
<td>46%</td>
<td>73%</td>
<td>24%</td>
<td>39%</td>
</tr>
<tr>
<td>Can you use it in a sentence?</td>
<td>30%</td>
<td>34%</td>
<td>26%</td>
<td>6%</td>
<td>44%</td>
<td>79%</td>
<td>31%</td>
<td>67%</td>
<td>4%</td>
<td>29%</td>
</tr>
</tbody>
</table>
children who fail to develop an adequate understanding of concepts about print are already at risk for later reading difficulties. Hence, interventions for this age level should aim at promoting the development of print knowledge.

• Immersing young children in e-readers, e-books, and apps help improve their ability to handle nonconventional texts such as those with interactive features that assist them in learning new vocabulary or sentence patterns. As technology becomes increasingly more sophisticated, it also becomes more of an indispensable source and support for learning. Hence, familiarizing preschool children with technology that can support and enhance their language and literacy development is preparing them for later literacy success in school.

• Immersing young children in e-readers, e-books, and apps help develop their concepts and vocabulary. Development of children's concepts and vocabulary during preschool years is critical to their later reading success. Preschool children who do not bring with them adequate concepts and vocabulary are already at risk for later reading difficulties. Hence, interventions for this age level should aim at promoting the development of concepts and vocabulary.

• It is likely that adults who have convenient access to books at home or at work such as through Kindle will be motivated to read for their own benefits and purposes. Hence, projects such as this one must continue to provide similar support to families who might find this type of technology inaccessible at home because of financial constraints.

• It is likely that adults who have sufficient knowledge and understanding of using various types of books to support their children's reading will apply this knowledge and understanding in supporting and enhancing their children's reading. Hence, projects such as this one must continue to provide families with opportunities to learn more about ways of and purposes for using traditional and e-books with children.

The Coalition project demonstrated positive results for parents and children. It has fostered parents and children's sustained involvement in reading activities at home. Parents' interest and motivation to read for their own purposes have also increased. They demonstrate more excitement now in reading with their child using Kindle, and applying valuable technology skills that allow them to effectively implement Kindle activities with their child. Children demonstrated gains in their emergent literacy skills such as book handling skills, responding to picture and print, concepts about print, concepts and vocabulary, and accessing features of interactive books using Kindle—all these literacy skills critical to their later success in schooling. The added value of the project is the heightened commitment of parents to their child's literacy learning and recognition of the role of technology, such as Kindle, in supporting and enhancing their child's language and literacy development.

References


of a randomized controlled trial. Newton, MA: Education Development Center and SRI.

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