



CENTER FOR EARLY  
CHILDHOOD INNOVATION  
AT SOUTH SIDE EARLY LEARNING

# Designing and Piloting a Soccer- Based Emergent Literacy Curriculum

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# EXECUTIVE SUMMARY

The *Soccer & Literacy for Littles* program aimed to reduce early learning gaps for children from low-income homes. We used a novel soccer context to engage and interact with young children while facilitating emergent literacy development through shared reading. During our six-week pilot program at South Side Early Learning's Reeb Avenue location in fall 2021, preschoolers (ages 3 to 4) learned new words related to soccer and read books together while participating in soccer activities. By the end of the six weeks, children showed improvements in emergent literacy and acquisition of targeted vocabulary. Additionally, teachers indicated overall satisfaction with the program and agreed that they would like to continue it. Based on this feedback, we plan to introduce the program to South Side Early Learning's Hilltop location and implement a second, more extensive program at the Reeb Avenue location in spring 2022. The subsequent iterations of the program will be used for further program refinement of the curriculum in hopes of offering this program to child care programs beyond those run by South Side Early Learning. In summary, *Soccer & Literacy for Littles* holds promise for increasing school readiness for preschool children.



# BACKGROUND

Emergent literacy skills, such as print knowledge, vocabulary, and alphabet knowledge, develop before formal schooling (National Early Literacy Panel, 2008) and are necessary for young children to read proficiently (Scarborough, 2001; Whitehurst & Lonigan, 1998). Developing emergent literacy is particularly important for young children from low-income homes due to the educational disparities of historically marginalized populations. These educational disparities have led to inequities in access to high-quality preschool. For example, families from low-income homes are less likely than higher-income families to enroll their children in preschool altogether (Koball & Jiang, 2018). Moreover, children reared in poverty are less likely to access high-quality preschool programs (Rothwell, 2016). These disparities are exacerbated by unprecedented challenges posed by the COVID-19 pandemic, highlighting the need for interventions to improve emergent literacy skills for preschool-aged children from low-income homes before kindergarten entry.

The *Soccer & Literacy for Littles* program aims to reduce early learning gaps for children from low-income homes. Some research suggests that integrating physical activity during instruction has been related to improvements in early literacy (Kirk et al., 2013) and provides a way for young children to engage in learning activities beyond the classroom space. Therefore, we decided to use the novel context of soccer to engage and interact with young children while facilitating language and literacy development through shared reading. The current study aimed to describe the formative and design experiment approach (Bradley & Reinking, 2011) we used to develop, implement, and refine a soccer-based emergent literacy curriculum.



# FORMATIVE AND DESIGN EXPERIMENT APPROACH

## Development

**Context.** Since 1922, South Side Early Learning (SSEL) has ensured that every child benefits from a holistic, high-quality early education. SSEL's model combines data-informed decision-making, embedded professional development, integrated family engagement, and evidence-based best practices, yielding impressive results. In 2021, SSEL partnered with a Columbus-based nonprofit organization called Final Third Foundation (F3). The mission of F3 is to provide soccer-based, youth-focused programs to grow the game and level the playing field. Recently, F3 has expanded to include education and outreach to provide *Soccer & Literacy* programming to children in elementary and middle school. *Soccer & Literacy* engages children in literacy activities to generate excitement about reading while learning on and off the soccer field. The partnership between SSEL and F3 aimed to develop, implement, and refine the *Soccer & Literacy for Littles* program to be age-appropriate for preschool children.

**Participants.** Thirty-three preschoolers in three classrooms participated in the first-ever pilot *Soccer and Literacy for Littles* program in the fall of 2021. On average, children were 3 years and 9 months old ( $SD = 7$  months, Range = 2 years and 8 months to 4 years and 10 months). Most of the children were male (64%) and children of color (61%), including Black or African American, Asian, and Latino. In regard to income, the average total family income was approximately \$45,000 ( $SD = \$54,383$ ; Range = \$0 to \$223,600) and a median income of \$23,400. Moreover, nearly 58% of families reported a total family income of less than \$40,000. Parents received a consent form that allowed them to opt-out of either the program or subsequent evaluation.

**Curriculum.** When developing the curriculum, first, we identified program goals and learning objectives. The program goals align with the overarching mission of F3 Soccer & Literacy programming: (1) to generate a sustained enthusiasm for reading, (2) to foster excitement about the sport of soccer, and (3) to develop an understanding of the importance of teamwork and leadership. To generate a sustained enthusiasm for reading, we aimed to promote child engagement by implementing lessons while reading culturally-responsive children's books, engaging children in structured learning activities, and incorporating learning activities with soccer play when possible. We introduced basic soccer skills using developmentally appropriate language and games to foster excitement about soccer while creating a fun and encouraging learning environment. Finally, to understand the importance of teamwork and leadership, we facilitated teamwork through soccer play and games and practiced using words to communicate feelings and thoughts during program activities.

“ Coach Max and I were impressed with the level of engagement from the first two sessions!”

Leiah Thomas, Director of Education,  
Final Third Foundation

We adapted the learning objectives from the Ohio Early Learning and Development Standards (Ohio Department of Education, 2020). The learning objectives included: (1) children will demonstrate knowledge of print and its uses, (2) children will interact during reading experiences, book conversations, and text reflections, (3) children will use language to express thoughts and needs and use appropriate conversational and other communication skills, and (4) children will understand soccer-related vocabulary words and use new words in context during soccer activities. We aligned the literacy targets with the learning objectives. We chose one code-focused target (i.e., skills related to decoding text) and one meaning-focused target (i.e., skills related to children’s understanding or comprehension). We focused on print knowledge for the code-focused target, including print concepts and alphabet knowledge. For the meaning-focused target, we focused on soccer-related vocabulary. Examples of the literacy targets include (a) can you point to the title of the book?, (b) what is this [spine] part of the book called?, (c) this is the letter K, (d) K makes a /k/ sound, and (e) we kick the soccer ball. See Table 1 for all literacy targets.

The soccer portion of the curriculum was based on F3’s established *Tiny Tots* recreational soccer program for 3- to 5-year-olds, created by F3’s Executive Director. It included various activities to engage young children in body awareness, balancing, and self-control while learning basic soccer skills. Some activities included practicing toe touches (“*pet the puppy*”), starting and stopping one’s body and the ball (“*freeze*”), and practicing ball control (dribbling vs. kicking). Each week, we increased the complexity of the soccer activities and built on what we practiced in previous sessions. By week six, preschoolers could complete a matching activity where they dribbled the soccer ball to match a cone to a rubber dot on the other side of the room. We intentionally used target vocabulary words during this time (i.e., kick, soccer, field, pass) in addition to other keywords to facilitate children’s language, such as jog, run, sprint, inside, outside, behind, above, below. See Table 1 for all soccer skills.

In terms of session length, we chose 20-minute sessions to maximize young children’s attention and engagement. For program length, six weeks was practical given that this pilot took place in the fall and would end right before the holidays. Lastly, we selected children’s books that focused on soccer to reinforce soccer-related vocabulary. We chose three diverse children’s books such that each book would be the focus for two weeks to allow for repeated exposure to the text. The books were *Kick It, Mo!* (Adler, 2019), *The Field* (Paul, 2018), and *Pelé* (Little People, BIG DREAMS) (Sanchez Vegara, 2020).

Table 1. Soccer & Literacy for Littles, Literacy Targets and Soccer Skills

Week	Literacy Targets	Soccer Skills
1	Print Concepts: Title, cover, back, spine Alphabet knowledge: S Vocabulary: soccer, kick	No hands on the ball Milkshake: inside of foot back and forth Pet the Puppy: toe touches on soccer ball
2	Print Concepts: Review title, cover, back, spine Alphabet knowledge: /s/ Vocabulary: soccer, kick	Review Stop the Ball: numbers game
3	Print concepts: Author, illustrator, directionality (left to right; top to bottom) Alphabet knowledge: K Vocabulary: field, pass	Review Rock the Baby: roll the ball with the bottom of foot Dribbling and passing
4	Print concepts: Review author, illustrator, directionality (left to right; top to bottom) Alphabet knowledge: /k/ Vocabulary: field, pass	Review Popcorn Red Light, Green Light
5	Print concepts: Text conveys a message Alphabet knowledge: P Vocabulary: score, players	Review Walk the dog: dribbling with bottom of feet Cone color matching without ball
6	Print concepts: Review all concepts from Weeks 1-5 Alphabet knowledge: /p/ Vocabulary: score, players	Review Relay race Cone color-matching with ball

## Implementation

**Weekly sessions.** Two F3 employees, a program manager and the Director of Education, implemented the soccer and literacy lessons once a week. At the beginning of the session, we introduced three rules for the day, including (1) be kind and helpful to others, (2) use your words, and (3) have fun. We reviewed these rules at the start of each session. Next, there was a 3-minute warm-up, including stretching. After the warm-up, preschoolers sat in a designated literacy area and engaged in an interactive read-aloud for approximately 7 minutes. Next, preschoolers transitioned to the designated soccer area. F3's program manager, who is currently a soccer coach, led the soccer portion of the session, which lasted approximately 10 minutes. At the end of our time together, we used quick knowledge checks as a transition to line up at the door (i.e., using alphabet cards and asking individual children to identify letters, asking children to share one thing they learned that day).

**Child assessment.** We measured children's emergent literacy and vocabulary skills before and after the program. For children's emergent literacy skills, we used the Get Ready to Read!-Revised screener (GRTR-R; Whitehurst & Lonigan, 2010). This widely-used screener includes 25 questions and takes approximately 10 minutes to complete. During the GRTR-R, children select one of four pictures to answer questions related to print knowledge (e.g., These are pictures of a book. Which one shows the name of the book?) and phonological awareness (e.g., These pictures are: mouse, cloud, cow, moon. Find what you get when you put /m/ and /oon/ together). The raw score is used to calculate an age-based normed score. We used raw scores and age-based norms when examining child outcomes. We examined young children's vocabulary using a curriculum-based measure developed by the first two authors. Four pictures were displayed for each of the six receptive items, and children were asked to point to a soccer-themed word (e.g., kick, pass, players). For each of the four expressive items, children were shown a picture of a soccer-themed word (e.g., soccer ball, goal, cone) and asked to label the picture.

**Attendance.** We tracked child attendance for each week of the program. Attendance for each week was summed for the total number of sessions attended.

**Teacher survey.** We examined program feasibility and satisfaction via a teacher survey. Preschool teachers (n = 5) completed an 18-question survey. Nine items gauged teachers' satisfaction with the program and were on a 5-point Likert scale (0 = strongly disagree to 4 = strongly agree). Nine items included specific questions about session duration, type of books used, length of the overall program, and literacy targets.



**Formative measures.** We utilized several data sources during the implementation stages of the project to inform the revision stage. We maintained researcher notes to document decisions, ideas for refinement, and debriefing conversations amongst the research team. Together, these data sources served to inform the decisions we made during the revision stage of the project. We collected qualitative measures, such as field notes, to understand the program’s feasibility better. In addition, the research team held debriefing meetings during each phase to review curricular content and document decisions on refining the curriculum. At the end of each week, we met to discuss what worked and areas for improvement. We used this time to discuss successes and challenges for the week and document any decisions we made about revisions to the curriculum and program elements moving forward. For example, this included improving transitions between literacy and soccer activities.

## Revision

We used data from all sources to revise the curriculum. First, we examined the child assessments. For emergent literacy, on average, children’s scores increased by two points after six weeks ( $M = 8.04$ ,  $SD = 4.65$ , Range = 0-19;  $M = 10.39$ ,  $SD = 6.41$ , Range = 0-25; fall and winter respectively). When examining the age-based norms, 50% of children were below expectations, 50% of children were meeting expectations, and 0% of children were exceeding expectations in the fall. In the winter, 52% of children were below expectations, 32% met expectations, and 16% exceeded expectations.



Given that the vocabulary measure was researcher-created, we examined the percent of children who got each item correct in fall and winter. There was an increase in the percentage of children who could identify targeted vocabulary across all words (expressive and receptive; see Table 2), except for “score.” It is unclear why this was the only vocabulary word that had a decrease in the percentage of children who answered correctly. One possible explanation is that one of the other pictures in the field of choices was confusing. Specifically for this item, people playing volleyball was a choice, which could have been seen as a correct choice for the word score. However, we did not collect qualitative notes on which picture the child chose, so we cannot examine this theory further.

Next, we analyzed attendance. Only 36.5% of children attended all six sessions, whereas another 36.5% attended five sessions, 9% attended four sessions, 6% attended three sessions, 3% attended two sessions, and 9% attended only one session. It is also important to note that there was a moderate correlation between child attendance and the winter age-based norms on the GRTR-R ( $r = .363, p < .05$ ). This correlation means that higher attendance was related to higher children’s scores. Therefore, increasing children’s attendance may also lead to additional gains in children’s skills in future programming. As noted, there were several child absences during the program’s final weeks leading up to the holiday. In future programs, we hope to mitigate this by not holding sessions so close to a holiday and increasing the duration of the program.

While children made modest improvements in their emergent literacy skills, including vocabulary, we can not make causal inferences without a comparison group. For example, other classroom instruction or maturation may have led to the observed gains. Based on these findings, we made the following revisions to the curriculum. First, we wanted to increase the duration of both the sessions and the overall program. Each session will be increased from 20 minutes to 30 minutes to allow more time on the literacy targets and knowledge checks. We have also expanded the duration of the overall program by creating an additional eight weeks of the curriculum using four new children’s books. Second, we will increase the dosage. Each literacy target will be referenced two to three times during a session. Third, we will add repeated readings by providing the classroom teachers with copies of the books with instructions to read the book at least once per week. Providing teachers with the books was also supported by formative measures, including the debriefing meetings. During the debriefing meetings, we noted that it was challenging to introduce children to the new books and literacy targets during Weeks 1, 3, and 5 because of the amount of new material and limited time. With teachers reading the books in their classrooms before the session, children will already be familiar with the texts so that the program manager can focus more time on literacy targets.

Table 2. Percent Correct for Each Vocabulary Item

Item	Fall % Correct	Winter % Correct
	Receptive	
Soccer	59.3	69.0
Kick	77.8	82.8
Field	33.3	44.8
Pass	22.2	31.0
Score	37.0	13.8
	Expressive	
Soccer Ball	70.4	82.8
Cleats	88.9	96.6
Goal	18.5	24.1
Cone	22.2	34.5

Next, we examined the teacher survey. Based on the teacher survey, most teachers agreed that *Soccer & Literacy for Littles* positively impacted and benefited their students (See Table 3). Overall, teachers were satisfied with the program, including both the soccer and literacy aspects. Teachers also agreed that they would recommend the program and that they would like to continue the program.

Based on this feedback, we plan to introduce the program to South Side Early Learning’s Hilltop location and implement the additional eight weeks of programming at South Side Early Learning’s Reeb Avenue location in spring 2022.

**Table 3. Teacher Satisfaction Items**

<b>Item</b>	<b><i>M</i></b>	<b><i>SD</i></b>	<b>Min</b>	<b>Max</b>
Soccer & Literacy had a positive impact on my students	3.60	0.55	3	4
I am satisfied with Soccer & Literacy	3.40	0.55	3	4
I am satisfied with the soccer aspect of Soccer & Literacy	3.40	0.55	3	4
I am satisfied with the literacy aspect of Soccer & Literacy	3.20	0.84	2	4
Soccer & Literacy benefited my students	3.20	0.84	2	4
I would recommend Soccer & Literacy to other teachers	3.40	0.55	3	4
I would like to continue Soccer & Literacy	3.40	0.55	3	4
The books used were appropriate	3.40	0.55	3	4
The literacy targets were appropriate	3.40	0.90	2	4

There was no consensus on whether books should stay focused on soccer only, how long to focus on each book, including other literacy targets, session length, and program duration for the teacher survey items that asked specific questions about each program element. One teacher noted that if the books focused on other topics, other topics that would be appropriate would be, “fun topics that would interest kids, various different cultural topics, diversity, etc.” Based on this feedback, we have selected four new diverse children’s books that focus on movement, not only on soccer. The four new books will be *Soccer Time* (Pierce, 2019), *Don’t Throw it to Mo!* (Adler, 2015/2016), *Firebird* (Copeland, 2014), and *Astronaut Training* (Cruz, 2021). We will continue to focus on one book for two weeks. When eliciting feedback about the literacy targets, one teacher suggested including “rhyming, alliteration, specific vocabulary, and story sequencing.” We have added phonological awareness and narrative targets in the additional eight weeks.

We made two revisions to the general schedule and soccer skills portion of the program. After a debriefing meeting and review of the weekly researcher notes, we noted that it was challenging to manage behaviors because children were used to the gross motor time being “free play.” First, program managers will be providing differentiation for groups during the soccer component of the session (i.e., some groups may need to spend more time on balancing, others may be ready to move on to more advanced games). Second, we will revamp our transitions during the sessions such that they are the same each week, so children are familiar with expectations and processes. The warm-up activity will be near the literacy space in the gym, which will make it easier to transition to literacy time; then, we will transition the same way each week to the soccer portion of the session. To end, we will transition children back to the literacy space - to either do knowledge checks or get our bodies ready to leave the gym and walk in the hallway quietly.





Finally, given the expansion and revisions to the curriculum, there will be a new program manager and assistant coach implementing the weekly sessions during the spring. The new program manager and assistant coach will attend a full-day workshop led by the Director of Education to maintain fidelity. The Director of Education will also complete two fidelity checks during the eight-week program. In addition, the Director of Education will manage and provide ongoing support throughout the program duration to both program managers and assistant coaches.

## Conclusion

Providing young children with quality learning opportunities before kindergarten entry is of great importance for both child outcomes and later academic-related behaviors. This initial pilot of a soccer-based emergent literacy curriculum is one way to engage preschoolers in meaningful learning experiences in a fun and interactive way while also helping them build peer relationships through teamwork and problem-solving. While implementing our six-week program in the fall was a success, our iterative planning and formative data sources enabled us to recognize areas for improvement. Future iterations of this work will continue to hold promise for preparing young children for school readiness.

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