

# Initial longitudinal evaluation results:

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Huntsville children whose parents participated in LENA Start<sup>®</sup> have stronger literacy skills two years later

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## Introduction

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[Huntsville City Schools](#) (HCS) has been operating the LENA Start parent-group program since 2015. They were one of two initial launch sites for the program, developed by the national nonprofit LENA, and the first school district in the country to adopt it.



In the four years since launching, they have served nearly 500 Huntsville-area families and maintained an 84% graduation rate. Their graduating families have continuously demonstrated significant increases in adult words, conversational turns, and children's developmental outcomes. But, ultimately, whether all of these outcomes indicate true success boils down to one question: **are children whose families participated in the LENA Start program entering school more prepared to learn? The answer is a resounding yes!**

As the first group of children whose parents participated in LENA Start classes four years ago get ready to enter pre-K and kindergarten this fall, district staff have been tracking their progress, hoping to better understand whether the program relates to their school success.

This report details the results of that evaluation, which compared results of the Star Early Literacy® assessment administered at the beginning of pre-K between children whose caregivers participated in LENA Start and those whose caregivers did not. The assessments were conducted on average about two and a half years after the families completed the program. **The evaluation found that children whose caregivers participated in LENA Start are getting higher scores on the Star Early Literacy assessment and those children are far more likely to be at an advanced literacy level entering pre-K.**

## Huntsville City Schools and the LENA Start initiative

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LENA Start uses regular feedback from [LENA's "talk pedometer" technology](#) to help increase interactive talk in order to close the early-talk gap, support kindergarten readiness, and build stronger families. Over the course of a few months of weekly sessions, parents and caregivers learn about the importance of interactive talk along with ways to incorporate more conversation into their daily routines.

Children whose parents are participating in the program wear a small device in the pocket of special clothing for one full day each week. The LENA device captures the audio environment the children experience over the course of the day. The audio is then turned into data that is presented as an easy-to-read feedback report for parents. LENA technology is designed to ensure complete privacy for the participating families: it cannot understand the meanings of words, does not have a playback feature, and the audio is deleted immediately after it is processed into data. No one can ever listen to it.



LENA feedback emphasizes adult words and, more importantly, [conversational turns](#), which are a strong predictor of a child’s overall language and cognitive development. Hourly graphs indicate which times during the day the child was experiencing the most interaction, so families can focus on doing more of what’s working well.

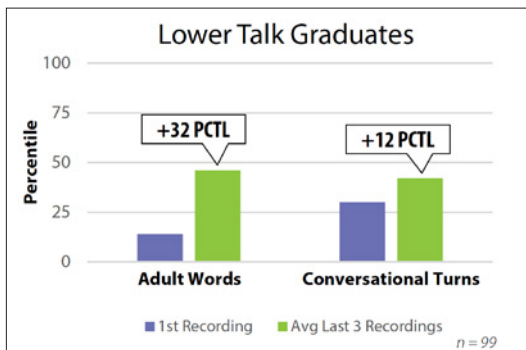
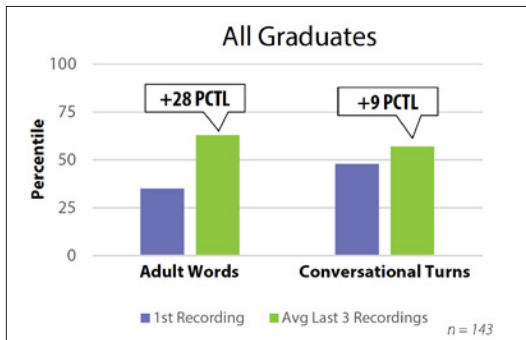
Families meet after each LENA Day to learn about the importance of interactive talk along with ways to incorporate more talk into their existing daily routines. They engage in peer learning to reflect on their data, discuss what’s going well, and share tips and challenges.

The HCS School Readiness team delivers LENA Start to English- and Spanish-speaking families in addition to overseeing 40 pre-K classrooms across the district (which as a whole serves nearly 24,000 students in northern Alabama). Investing in early childhood is part of the district’s long-term strategy to help ensure students arrive at kindergarten ready to learn and to reduce the likelihood that they will require remediation later.

In 2017, the team was awarded the prestigious Terry Paul “Making a Difference” award in recognition of their outstanding contributions to fostering talk with children birth-3. Out of more than 30 LENA Start sites nationwide, they have consistently demonstrated among the largest impacts when it comes to improvements in home language environments and child outcomes.

## LENA Start short-term results

### Increased words and conversational turns

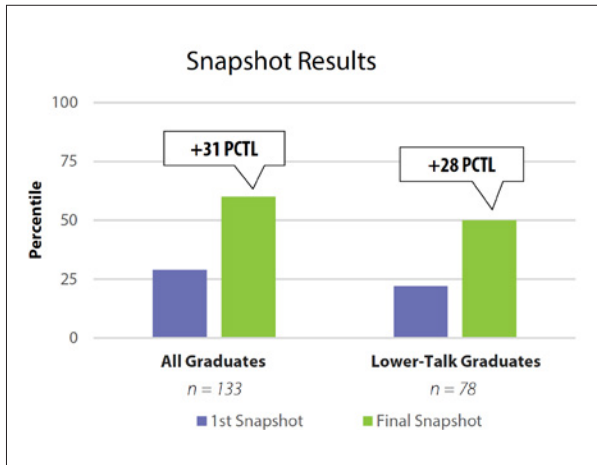


Relative to where they started (blue bars), graduates showed significant increases (green bars) in adult words and conversational turns. Families were considered part of the “lower talk group” if either words or turns on the first recording fell below the 50th percentile (bottom panel). These families had greater gains in adult words and conversational turns. The fact that the observed change in adult words is larger than the observed change in conversational turns is not surprising and is consistent with results observed in all other LENA Start sites. The reason for this is that it tends to be easier for parents to initially boost the adult word count. Increasing turns takes higher skill and more effort and so those changes tend to lag the changes in word count.

Shared book reading is emphasized in the program, and parents reported reading over two and a half times as much with their children at graduation compared with the start of the program.

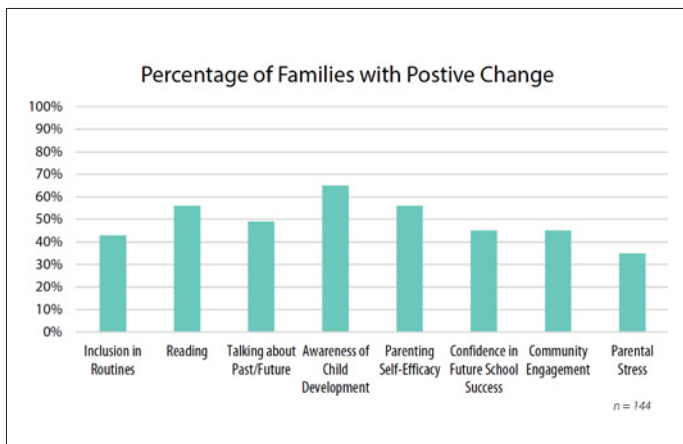
## Accelerated child language development

The Snapshot is a parent questionnaire that measures a child’s receptive and expressive language development. Results below compare Snapshot scores after the completion of LENA Start and show that children whose parents participated in the program are gaining over 2.25 months of developmental skill every month. Rather than falling further behind, the children are actually catching up and surpassing their peers! LENA Start is motivating parents to talk more and giving them the tools to close the gap.



## Parent Perceptions

83 percent of families who completed the pre and post Parent Perceptions and Actions Survey show gains in total scores, indicating positive influences on parent perceptions and interactive behaviors in a number of domains. The percentage of families that reported positive change in each of the domains is detailed on the left.



In addition to formal measurements, parents also provided qualitative feedback on their experiences:

*“Now that we have made the talking tips part of our everyday life, they’re easy. It’s just a little extra step that you don’t even pay attention to. It just becomes a part of everyday life. If you can dedicate an hour to watching a television show, you can dedicate an hour just to learning about your baby. For me as a man, I learned a lot about my child. You will never know the benefits your child can receive if you don’t try.”*

– Father who participated in LENA Start at Huntsville City Schools

*“Since I was in high school when I had my daughter, I didn’t know much about kids and it was hard for me to spend time with her. It was stressing me that I had to be responsible for her by myself, and I didn’t know how to be a mom. Now, I have learned how to share my time with her and do things together.”*

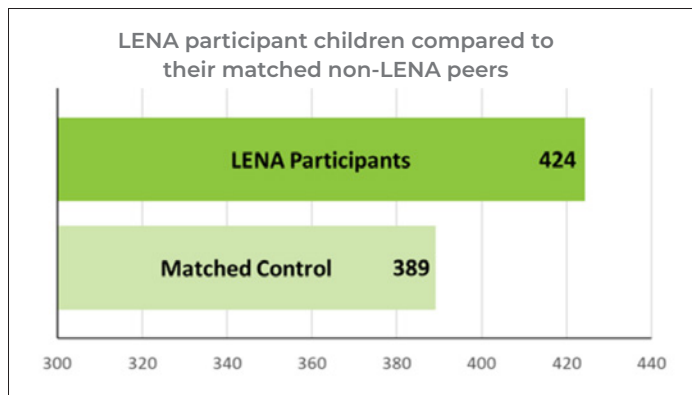
– Mother who participated in LENA Start at Huntsville City Schools and went on to become a program coordinator

*“We had a real good tight-knit group of fathers that was in the class, so we really enjoyed it. As we started doing the program, we got a little more serious, and everything kind of changed. I could tell the difference with her. My daughter just seemed like she was understanding more.”*

– Father who participated in LENA Start at Huntsville City Schools

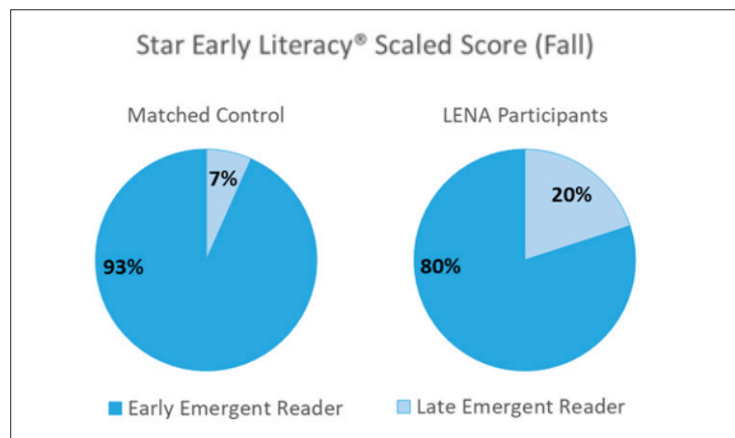
## LENA Start long-term results

For the longitudinal evaluation, Star Early Literacy® Scores for 35 children whose parents/caregivers participated in LENA Start were compared to those for a comparison pool matched on age, gender, and ethnicity. The assessments were conducted in the Fall of 2018 at the time the children entered pre-K and about 2.5 years after LENA Start participation. The mean assessment age was 4.4 years. An iterative statistical sampling approach was applied to achieve a stable set of sample statistics against which to compare the statistics of the LENA Start sample. Final participant samples included 46% Female, 51% Hispanic and 34% Black participants.



**Four-year-olds whose parents participated in LENA Start demonstrated considerably higher Early Literacy Scaled Scores than a matched control sample. These differences were statistically significant (that is, not due to chance) and large in size.** This increase of 35 scaled score points for the LENA sample represents a 9% benefit relative to non-LENA participants and a medium to large effect size, Cohen's  $d \sim 0.7$ .

**LENA Start participant children were also three times as likely to have reached the more advanced "Late Emergent Reader" stage entering pre-K than the matched control children.**



### Star Early Literacy Terminology

**Early Emergent Reader (scaled score of 300–487):** Student is beginning to understand that printed text has meaning. The student is learning that reading involves printed words and sentences, and that print flows from left to right and from the top to the bottom of the page. The student is also beginning to identify colors, shapes, numbers, and letters.

**Late Emergent Reader (scaled score 488–674):** Student can identify most of the letters of the alphabet and can match most of the letters to their sounds. The student is also beginning to "read" picture books and familiar words around the home. Through repeated reading of favorite books with an adult, students at this stage are building their vocabularies, listening skills, and understandings of print. They are starting to read picture books and familiar words.

**Source:** Renaissance Learning, accessed via <http://doc.renlearn.com/KMNet/R001316612GB7E6E.pdf>

## Summary

These very promising results augment recent research highlighting the importance of [conversational turns](#) as well as the more immediate [language and developmental gains](#) families have achieved across LENA Start sites nationwide.

*"We're thrilled to see these results, validating that the hard work of Huntsville's parents and the School Readiness team is paying off," Helen Scott, the district's school readiness director said. "With more children entering our pre-K classrooms prepared to learn, we expect to see improvements in kindergarten readiness and third grade reading proficiency. Participating in LENA Start and Huntsville's preschool program is a powerful combination!"*



The children contributing to this initial longitudinal analysis have now completed pre-K and are entering kindergarten. In the coming months, additional analyses will be conducted to examine whether the impressive gains shown here are maintained into kindergarten. As well, the number of LENA Start children entering pre-K will continue to grow, enabling more detailed analysis to be applied that looks at other differentiating factors such as performance within the LENA Start program.