



# LENA Grow Evaluation

## Synopsis: Evaluation of LENA Grow in Milwaukee Head Start Classrooms

Spring 2022

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The LENA System is an innovative technology that provides automated feedback on children's language environments. Children wear digital recorders to capture the full language environment during a typical day. LENA software automatically summarizes the quantity of adult-child interactions. The **LENA Grow** program incorporates classroom-level and child-level LENA data with a coaching curriculum to promote language nutrition for early educators. Through LENA Grow, teachers complete a 10-week curriculum, where they receive LENA data from their classrooms, discuss strategies to increase their language nutrition, and develop goals to increase the quantity and quality of interactive language used with children in their classrooms. LENA summarizes the overall amount of talking within the classroom environment (Total Words), as well as the amount of interaction with individual students (Conversational Turns).

We evaluated the program's overall effectiveness at three levels: (1) Direct impact on teacher talking, (2) Impact on teacher self-perceptions, and (3) Impact on child outcomes. The evaluation was conducted with data collected from treatment and control classrooms at Next Door Foundation, a gold-standard early childhood agency that serves children and families in Milwaukee. Next Door provides center-based early childhood education through its direct administration of Early Head Start, Head Start, and Kindergarten classrooms.

The following is a high-level synopsis of our findings from this evaluation. For complete background information, participant demographics, and results from the study, please see the full Executive Summary.

### 1. Impact on Teacher Talking

At the end of the 10-week coaching program, children in the 10 classrooms were exposed to adult talk at a much higher frequency. Teachers went, on average, from producing 950 words per hour to producing 1,163 words per hour, which was a **22% increase in words produced**.

The teachers, as a group, notably increased conversational turns with the children in their classrooms. At baseline, teachers were producing, on average, 29 turns per hour (56% *higher* than nationwide averages). Given they started at unusually high levels, it is even more noteworthy that at the end of the LENA Grow program, teachers were producing an average of 36 turns per hour, which was a **24% increase in conversational turns over a 10-week period**.

These gains were particularly pronounced for children who started out in the bottom third of the classroom in baseline conversational turns. These children experienced a **68% increase in conversational turns**.

## **2. Impact on teacher self-perceptions**

Teachers completed a pre/post Teacher Perception Survey, a 14-question survey that asked about teachers' **(a) Beliefs & Actions** surrounding education (e.g., how often they read to children in their classroom, how much talk there is in the classroom, how connected teachers are with children), **(b) Job Satisfaction** (e.g., tell friends they like their job, perception of stress, feel valued as an educator), and **(c) Self Efficacy** (e.g., confident in abilities, strong knowledge of child development). The treatment group, as a whole, reported increases for their Beliefs & Actions, Job Satisfaction, and Self Efficacy, scoring an average of 52.0 at baseline and 55.8 at the end of LENA Grow (a 7.5% increase in scores). The control group stayed largely the same, scoring an average of 52.4 at baseline and 52.3 at the end of the 10-week period. The changes in total scores were statistically significant for the treatment group and not significant for the control group.

## **3. Impact on child outcomes**

At Next Door Milwaukee, the educational team regularly collects child-level data using Teaching Strategies Gold. Three subtests within Teaching Strategies Gold examine a range of children's language and academic skills, including **(a) Language Skills** (e.g., following directions, expanding vocabulary, engaging in conversations), **(b) Cognitive Skills** (e.g., solving problems, flexibility in thinking, making connections), and **(c) Literacy Skills** (e.g., rhyming, using books, interacting during reading experiences). The children in the treatment group grew significantly faster than the control group in the Literacy Skills domain, confirmed by statistical analysis.