

Mile High Early Learning and Clayton Early Learning: Play and Learn Groups with LENA[®] Feedback

What is the community challenge?

A critical opportunity for developing fundamental early literacy skills is adult-child interaction with books and storytelling. Research indicates that there are disparities in children’s language and literacy development, with children and families from under-resourced communities receiving less early language and literacy support.

Program At-a-Glance

CNCS Program: Social Innovation Fund

Intervention: Play and Learn Groups (PLG) with LENA[®] (Language Environment Analysis System)

Grantee: Mile High United Way

Subgrantee: Mile High Early Learning and Clayton Early Learning

Focus Area(s): Youth Development

Focus Population(s): Low-income families with infants and toddlers ages birth to 30 months

Community Served: Denver, CO

What is the promising solution?

Play and Learn Groups (PLG) are structured play groups for young children and their caregiver(s) led by a trained facilitator. Participants receive: training in Dialogic Reading (DR; an evidence-based early literacy program that focuses on interactive reading); parent meetings on developmental topics; and coaching in reading and parenting skills. The LENA[®] system uses an audio-recording device that children wear for 10 to 16 hours to record the home literacy environment. Facilitators present LENA[®] results to parents and discuss ways to increase meaningful adult-child interactions that support the development of oral language and communication skills. The program seeks to increase language-rich interactions between children and parents, increase the quality and frequency of book reading, and increase children’s oral language and communication skills.

What was the purpose of evaluation?

The evaluation of the Play and Learn Groups’ use of LENA[®] began in 2012, with reporting completed in 2017 by the Butler Institute for Families at the University of Denver. The evaluation assessed whether families who received LENA Feedback in addition to DR and the other PLG components experienced greater gains in child oral and communication skills and greater frequency and quality of literacy activities in the home relative to those who did not receive LENA[®] Feedback. The evaluation employed a quasi-experimental design with sites randomly assigned to test the impact of the LENA[®] feedback system. There were three treatment sites and two control sites. During the time of the study, 370 eligible children were enrolled in the centers; 132 children were in the treatment group (58% of eligible PLG participants from three sites) and 78 children were in the control group (55% of eligible PLG participants from two sites).

What did the evaluation find?

Mile High Early Learning and Clayton Early Learning engaged in a rigorous evaluation of the impact on parents and children receiving LENA® Feedback as part of the Play and Learn Groups program. The evaluation included an implementation study that focused on observing how the program was implemented and operated, and an impact study that sought to determine the extent to which the feedback influenced participants' language-rich interactions, book reading, and oral language and communication skills relative to those who did not receive feedback.

This five-year study demonstrated that:

- Parents in the intervention group (who received LENA® Feedback and DR) made statistically significant gains over time in support of their child(ren)'s language and literacy skills, while comparison parents (in the DR only group) remained stable or showed more modest gains. These significant impacts are summarized below.

Outcome	Evidence of Impact	Effect Size
Reading Frequency	<ul style="list-style-type: none">• Statistically significant difference between intervention and comparison groups' growth over time.• Greatest gains among those who received 2 or more LENA® Feedback sessions.	Small
Storytelling Frequency	<ul style="list-style-type: none">• Intervention group: Statistically significant increase over time.• Comparison group: No significant increase over time.	Medium
Interactive Reading Behaviors (parent report)	<ul style="list-style-type: none">• Intervention group: Statistically significant increase over time.• Comparison group: No significant increase over time.	Medium

Notes on the evaluation

Because literacy is a complex construct, this evaluation utilized multiple indicators of literacy, measured at either the child or parent/caregiver level (e.g., reading or storytelling frequency, conversational turns, interactive reading, vocabulary, words produced, verbal and nonverbal communication). By most indicators of literacy, parents who received LENA® Feedback did not make significantly greater gains than did parents who did not receive feedback (when compared directly to one another in the same analysis), possibly due to lack of impact or lack of power to detect an effect. Therefore, although families in the treatment condition experienced increases over time on most indicators, the evaluation cannot confidently attribute improvements in scores over time to the LENA® intervention. Also, baseline equivalence on race/ethnicity and language was not achieved between the unmatched treatment and comparison groups, suggesting the significant effects that did emerge in the evaluation may be due to preexisting group differences or demographics. On several of the measures, scores cannot be calculated if data on multiple items are missing (this was the case for only one participant on one measure), while on other measures, fewer than 2% of the responses on any given item were missing, thus the study did not adjust for missing data. The study did not adjust for multiple comparisons, nor did it account for nestedness of students within sites as site characteristics were confounded with race/ethnicity and language, which were controlled for where relevant. At the child level, vocabularies of both intervention and comparison children increased significantly, but due to low power and threats to validity, the evaluation could not establish with certainty that the LENA® Feedback intervention was responsible for these increases.

How are Clayton Early Learning and Mile High Early Learning using the evaluation findings to improve?

Based on the results of this study, it was determined that LENA® Feedback may be too expensive to continue to implement, considering its relatively small impact. Future opportunities to support families' early language and literacy skills could include identifying other types of individualized data (e.g., parent-child observations) that are simpler and less expensive to collect and can be used during one-on-one coaching sessions with families.

Evaluation At-a-Glance

Evaluation Design: Quasi-experimental (QED) impact evaluation with five sites randomly assigned to either the experimental (LENA® Feedback) or comparison (PLGs "as usual") conditions

Study Population: Infants and toddlers ages birth to 30 months

Independent Evaluator: The Butler Institute for Families

This Evaluation's Level of Evidence*: Preliminary

*SIF and AmeriCorps currently use different definitions of levels of evidence.

The content of this brief was drawn from the full evaluation report submitted to CNCS by the grantee/subgrantee. The section of the brief that discusses evaluation use includes contribution of the grantee/subgrantee. All original content from the report is attributable to its authors.

To access the full evaluation report and learn more about CNCS, please visit <http://www.nationalservice.gov/research>.

The Social Innovation Fund (SIF), a program of the Corporation for National and Community Service (CNCS), combines public and private resources to grow the impact of innovative, community-based solutions that have compelling evidence of improving the lives of people in low-income communities throughout the U.S. The SIF invests in three priority areas: economic opportunity, healthy futures, and youth development.