

Introduction

In the U.S., each week nearly 11 million children under 5 year are cared for by child care providers outside the home. Most of these children spend up to 60% of their waking hours in a childcare setting. When that care is provided in an environment rich with language interactions, it establishes a foundation for language growth and later school success.

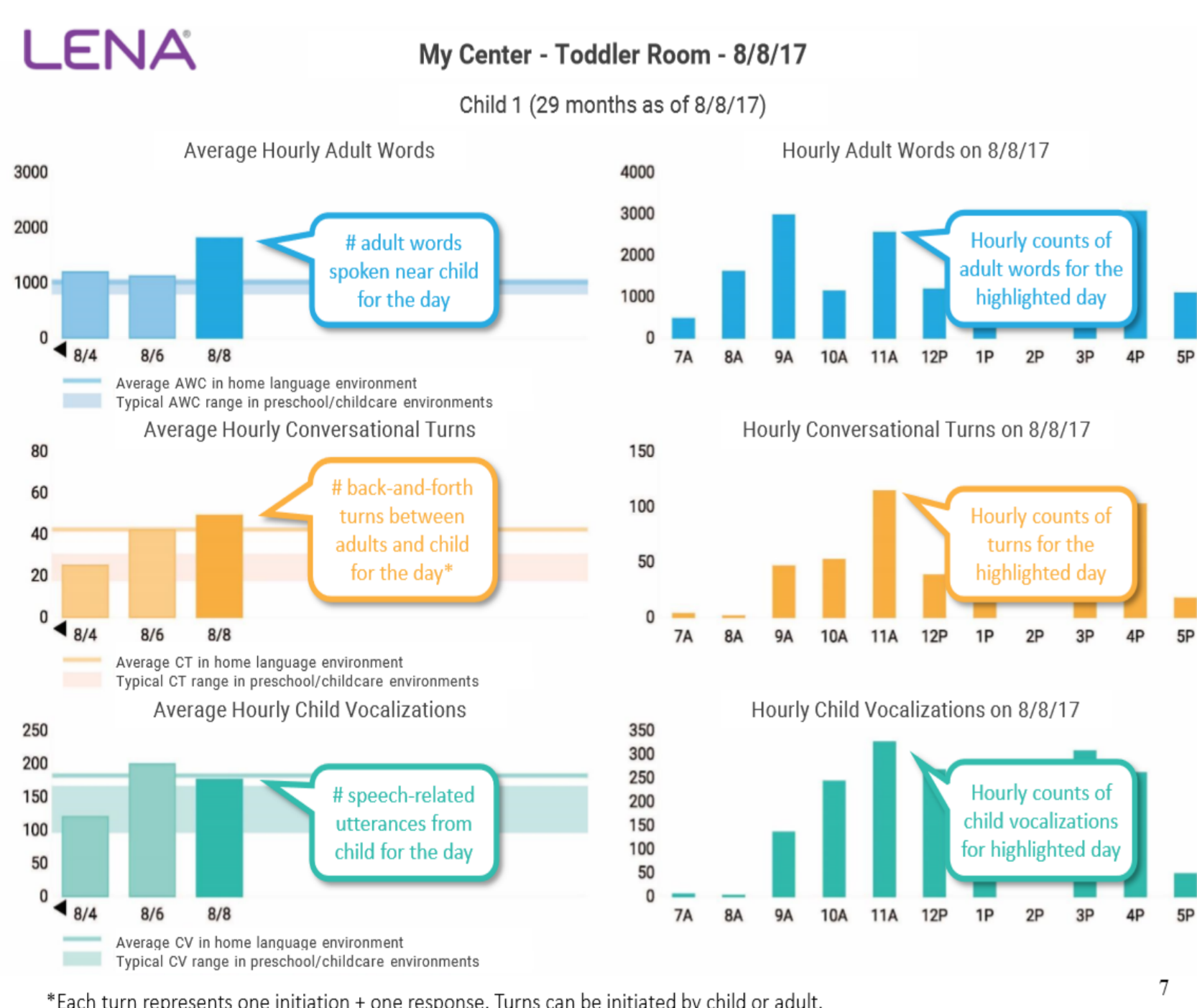
The Problems:

1. Child care providers have not yet learned the importance of talking and interacting with infants and toddlers.
2. Providers are often unaware of the frequency (or infrequency) of their interactions and talk with children in their classrooms.
3. Teachers are often unaware of practices they can employ to enrich children's language learning environments across classroom routines.

Purpose

- This project was part of a community-wide effort to enhance the quality of child care in a low-income community through professional development called Start Young funded by the State of Kansas Children's Cabinet and Trust Fund led by the Family Conservancy.
- The aim was to enhance the children's classroom language learning environments by giving child care providers feedback on the amount of their talking and interacting with children using the automated LENA system and the LENA Grow coaching strategies for increasing language interactions with children.
- Because this was an early study examining LENA data gathered in community-based child care settings as opposed to the home, we sought to examine how the LENA measurement system worked in these noisy infant-toddler classrooms with children talking at once.
- We did this by monitoring how the session-by-session variation in the percentage of clearly audible, meaningful speech covaried with trends in word counts and interactive turns scores.
- Another aim was to assess child care providers' views of the social validity of this approach through questions about its feasibility and acceptability.

LENA™ and LENA Grow™



The LENA System™ measures the amount of talk in the classroom using digital device worn by each child in the room on each day of observation. Feedback reports show educators how much they talk with children and where they can improve.

LENA Grow™ is an approach to professional development that provides early educators with regular feedback on talk in their classrooms from LENA's "talk pedometer" technology and short weekly coaching sessions to help them increase interactions and build children's language.

Research Questions

1. Will the LENA™ system be sensitive enough to capture AWC, CT, and CV in noisy, highly variable infant-toddler classroom routines (Indoor, Outdoor, and Mealtime)?
2. Will LENA Grow feedback and coaching increase teachers' Adult Word Count (AWC)/child, Conversational Turns (CT)/Child, and Vocalization (CV).Child in the classroom?
3. Will teachers find LENA Grow™ feasible and acceptable?

Participants

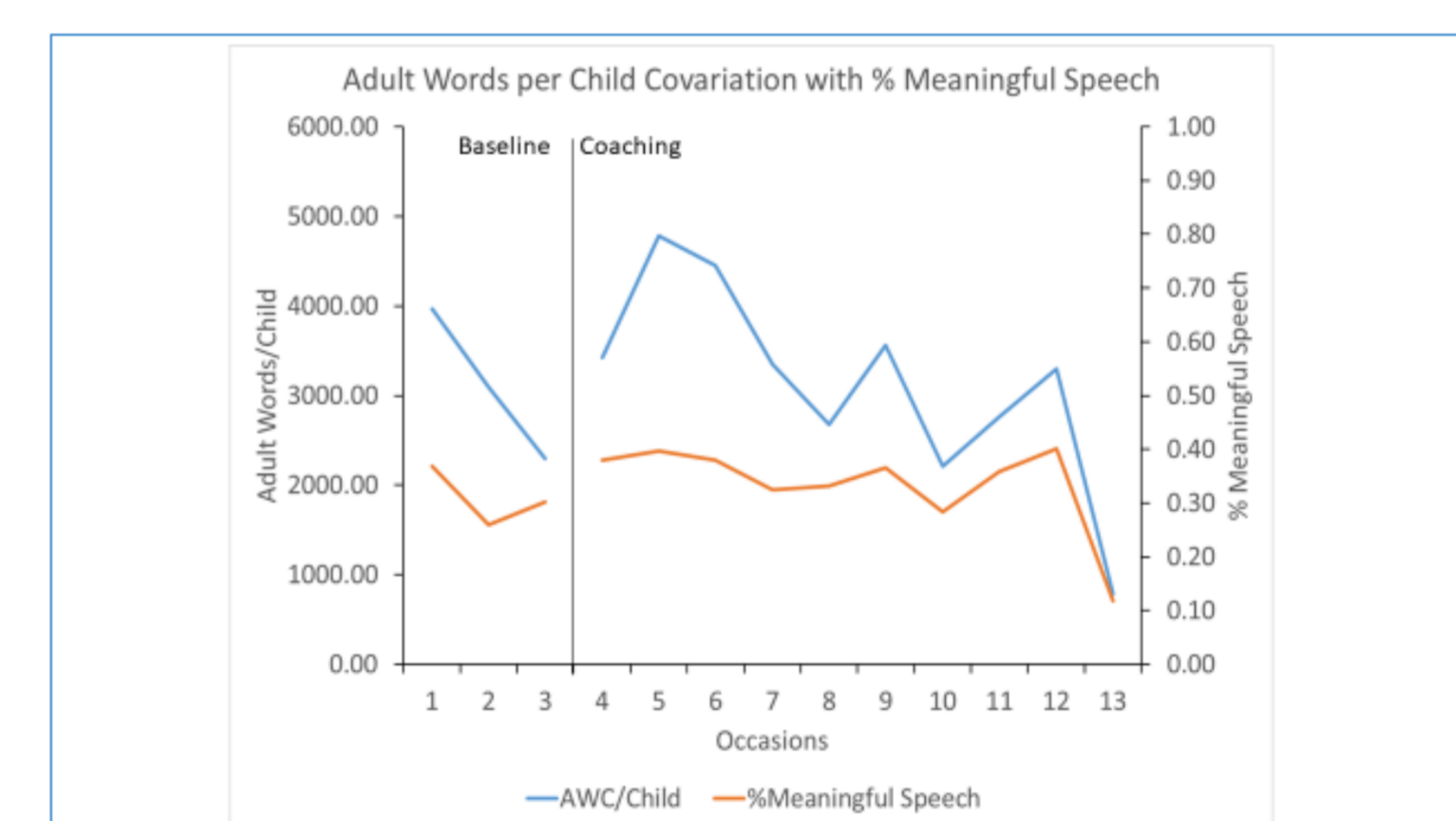
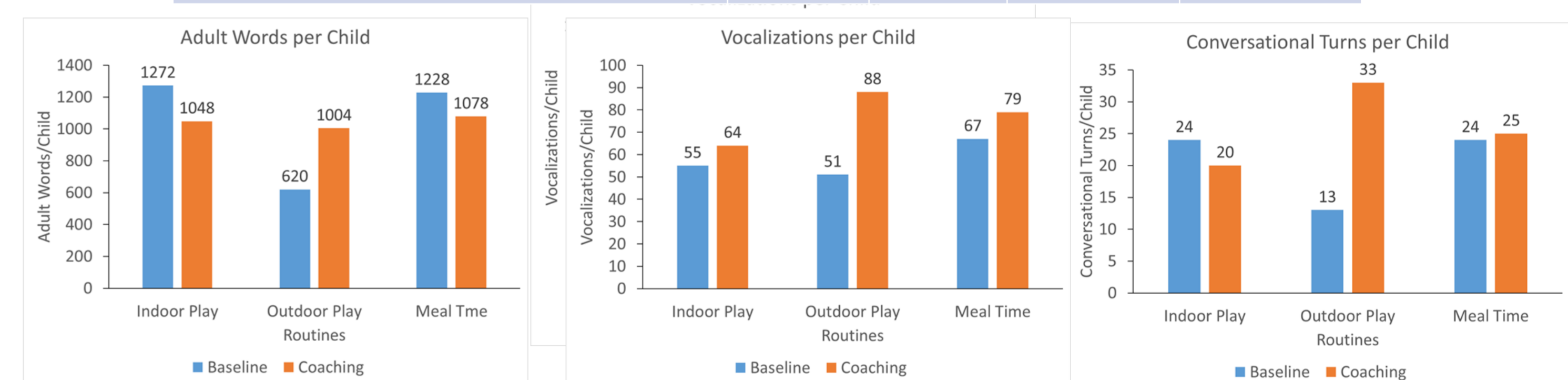


- We recruited 14 teachers and 34 children from 3 infant-toddler centers.
- Children ranged in age from 14-20 months: one child was female; one had an IFSP; all had English as their home language; one child was African-American, one Euro-American; and one had mixed race backgrounds
- 3 teachers had completed their B.A. degree; 9 had finished high school or completed their G.E.D., and 2 had A.A. degrees.
- Observation data are reported from one classroom and teachers' interactions with 3 children who remained in this classroom for the 13 week study.

Results

Table 1. Overall Descriptives Across All Routines by Condition

Variables	All Classroom Routines			
	Baseline		Coaching	
	Mean	SD	Mean	SD
Adult Words/Child	3121	836	3130	1131
Conversational Turns/Child	61	11	78	32
Vocalizations/Child	173	55	231	63
% Meaningful Speech	0.31	0.06	0.33	0.08



Summary

- About 33% of total daily recordings, ranging from a low of 10.5% to a high of 41.9% was clear and meaningful to LENA, and used to produce scores. Word counts and turns scores were influenced by meaning speech patterns.
- Scores indicated that LENA coaching and feedback did not increase AWC, but CT (turns) was increased during coaching.
- CV was also increased during coaching.
- The largest systematic change was seen during outdoor play but not evident during indoor play or mealtime.
- Overall, teachers reported the LENA devices were easy to use, the recordings were not disruptive to the classroom environment, the LENA graphs were understandable and easily interpreted.
- Teachers reported the coaching was helpful in setting goals for the classroom and facilitated discussion around talking with children.
- Seeing videos of other teachers talking to children was also helpful in seeing how language could be embedded across routines.

Acknowledgement

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