

BUILDING LANGUAGE THROUGH BOOKS: OUTCOMES OF DIALOGIC READING TRAINING WITH PARENTS AND THEIR INFANTS WITH HEARING LOSS



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It is especially important that children with hearing loss (CWHL) receive at least average levels of parent input, if not higher. Ambient language accessible to CWHL is limited by the extent that hearing technology can overcome hearing loss, further constrained by background noise and distance. When a parent sits with a young child to share a book, however, the parent is at an optimal distance from the child, overcoming background noise and providing an audible signal. Pictures in the book and actions that accompany storytelling provide clear referents for language that the child is hearing.

Building Language through Books, or The Bookbags Project, targets rate of parent talk and dialogic book reading strategies. Dialogic book reading is a style of book sharing with young children that incorporates specific strategies to engage active participation (Huebner, 2006). Parent education in dialogic reading has been shown to be effective in increasing the use of strategies by parents with typically developing toddlers and preschoolers (Briesch, Chafouleas, Lebel & Blom-Hoffman, 2008; Huebner & Meltzoff, 2005).

This poster describes (1) the dialogic reading parent program and (2) strategies for documenting outcomes of the intervention. Results will focus on one aspect of outcomes analysis, the use of LENA recordings and Daily Reports.

Method

Participants

Sunshine Cottage School for Deaf Children (SCSDC) has served children with hearing loss and their families since 1947. The enrollment is a culturally diverse group: Hispanic 48%, Caucasian 38%, African American 7%, and other or multi-racial 7%. Many families served by Sunshine Cottage are economically disadvantaged - 43% of students with hearing impairment have a family income below \$35,000. No family is turned away from the Parent-Infant Program (PIP) due to inability to pay. Approximately 40% of families speak Spanish in the home to some extent, ranging from bilingual use through monolingual Spanish.

All families received coaching in dialogic book reading. 18 (35.3%) were selected for the outcomes study, representing a range of parent talk levels obtained during baseline observations. **10 families** (19.6%) have continued in the study.

Child Characteristics

Hearing Level	Gender		Technology			Home Language	
	Male	Female	BAHA	Aids	C. Implants	English	Spanish
Slight/mild		1		1		1	
Moderate	1	2	1	2		3	
Mod-Sev		2		2		1	1
Severe	1			1			1
Profound	2	1			3	2	1

Age at initial technology fitting/stimulation:	Age at first data collection:
Mean: 6.8 mos	Mean: 15.3 mos
Range: 3 – 13 mos	Range: 9 – 27 mos

One child presented with other health impairment/disability.

Intervention

Parent Advisors coach parents at each weekly session to use **PEER strategies** when looking at books with their child:

- Prompt the child to say something
- Evaluate the child's response
- Expand the child's response
- Repeat the prompt

SCSDC PIP purchased approximately 200 books in English and Spanish and 60 bookbags for the project. Parent-advisors filled bookbags with 5 books each with a card giving suggestions on how to read with a baby or toddler. Families took a bookbag home every week and practiced dialogic reading strategies while reading to their infants.

Experimental Design

An ABAB intervention design followed the academic calendar.

- Baseline:** September – October
- Intervention I:** October – December (6 weeks)
- Withdrawal I:** Winter break (3 weeks)
- Intervention II:** January – March (6 weeks)
- Withdrawal II:** Spring break (3 weeks)

Data Collection & Analysis

Data were collected via LENA recordings during baseline period & at the ends of intervention & withdrawal periods. A *drill-down* approach to analysis of dependent variables moves toward direct observation of book-sharing episodes at each stage:

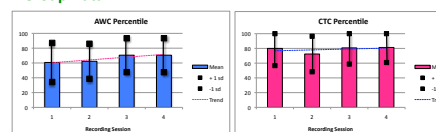
- Stage I:** Full day Adult Word Counts (AWC) & Conversational Turn Counts (CTC), projected & percentiles
- Stage II:** Hourly AWC & CTC, comparing conversational turns with book sharing to periods without book sharing
- Stage III:** Transcription of book sharing episodes from LENA recordings, coding & counting parent strategies

Results

Research hypotheses/predictions:

- Overall increase in parent talk, strategies, conversational turns over time
 - Depression in measures at the end of withdrawal periods followed by recovery during intervention
- Results below display Stage I analyses

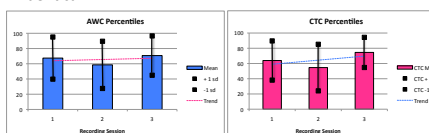
Group Data



Trends reveal a slight increase over time

Comparison to Controls

Controls: 11 families from previous year who did not take part in systematic dialogic reading training. 3 sessions were recorded over an equivalent duration. Mean child CA at initial recording = 16.91 months. Distribution of child hearing level & age at technology use was similar, but not identical.

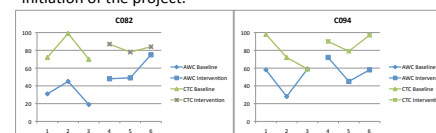


Trends among the control group also increased over time.

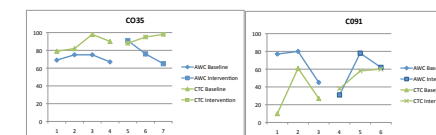


Individual Data

Graphs below are representative of individual data. Baseline data includes measures from previous school year prior to initiation of the project.



Increases in percentile rankings and stabilization of measures.



C035: Improved CTC may be general improvement, AWC decreases across intervention

C081: Variability obscures possible intervention effect

Conclusions

Overall improvement in AWC and CTC percentiles were shown over time, although similar effects were observed in a group of families who did not receive systematic dialogic reading instruction. Thus, the beneficial effect of general intervention. Individual data do reveal changes during the Bookbags Project, primarily in CTC percentiles. Stabilization of CTC percentiles was observed as well as increases in levels. Measures from some families, however, were too variable from session to session to observe change.

Full-day measures contain much spoken language that is not a part of dialogic reading. Although some positive changes were observed, full assessment of the intervention requires moving closer to the book sharing episode. Data analysis will continue with the final recording session.

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