

# Using LENA to Guide Tiered Instruction: Promoting Conversational Turn Taking in Preschool



Sandra Hess Robbins, M.Ed.

[srobbin4@kent.edu](mailto:srobbin4@kent.edu)

Center for Excellence in Early Childhood Research and Training



## Setting/Participants

- Inclusive preschool classroom
- Low income community
- 16 children (at-risk)
- 8 children with identified disabilities
- 8 typically developing peers
- 2 teachers (co-teaching)
- 1 instructional aide

## Procedures

- Three interventions were implemented in an additive manner based on a hierarchy of intensity (increased opportunities for conversational turn taking)
- Intervention integrity was monitored using researcher developed fidelity of implementation measures

## Measures

- Preschool Language Scale, Fourth Edition (PLS-4)
- Battelle Developmental Inventory, Second Edition (BDI-II)
- Assessment, Evaluation, Programming System (AEPS) Social and Social Communication Areas
- AEPS Family Report Social and Social Communication Areas

- Live observations of the intervention and instruction were conducted by graduate students using flip video recorders
- The video was uploaded to KSUtube to provide access to multiple observers

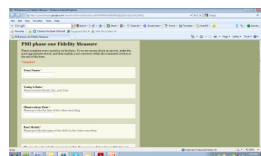


## Variables

Dependent variable  
Conversational Turn Taking

Independent variable  
Tiered instruction

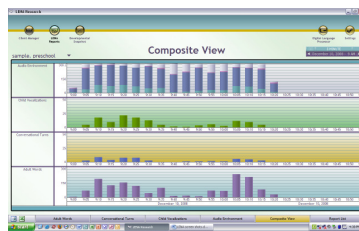
- Universal Design for Learning (UDL) – Tier 1
- Peer-Mediated Intervention (PMI) – Tier 2
- Milieu Teaching Strategies (MT) – Tier 3



## Spotlight on LENA



Daily use of DLPs can provide teachers with immediate feedback on instructional success  
**Teachers increase their use of intervention when provided with graphical feedback (Casey & McWilliam, 2008)**  
 Information extracted using the ADEX tool can provide critical information about child outcomes  
**Increasing children's opportunities for conversational turn taking with peers**  
 Analysis of LENA reports can be used to guide teacher decision making for tiered instruction  
**Increases/decreases in trends compared to a set performance criterion aids teacher/researcher decision making regarding when to move children up or down instructional tiers**

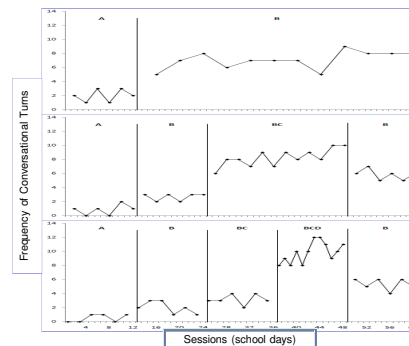


## What can the data tell us??

- The child takes the least amount of conversational turns between 9:30 and 10:00
- During that time there is a lack of meaningful language support for the child
- The teacher must consider the classroom activity between 9:30 and 10:00
- Introducing a communication intervention during that time may alter child behavior

**Evaluation of child data using a daily/weekly averages can provide a more reliable estimate of child outcomes (Bruckner, Yoder, McWilliam, 2006). Watching for an increase or decrease in trend over time can support teacher/researcher decision making about instructional intensity**

## Design



Begin with the implementation of a class-wide intervention (Tier 1). If children make little or no progress, increase intervention intensity and therefore, opportunities for turn taking, by adding a small group intervention (Tier 2). If a child still makes little or no progress, increase intensity by adding an individual intervention (Tier 3)

- An increasing intensity across participants single subject research design is being utilized
- Baseline
- Phase B (Universal Design for Learning; UDL)
- Phase BC (UDL plus Peer Mediated Instruction; PMI)
- Phase BCD (UDL plus PMI plus Milieu Teaching; MT)
- Withdrawal to B (UDL)

## Alternate Decision Making Scenario

What time of the day does the child take the least amount of conversational turns?

Teacher-directed activity such as circle time or small group activity

Child-directed activity such as free-play time

Implement Universal Design for Learning (UDL) for conversational turn taking

Implement Peer Mediated Instruction (PMI)

Re-evaluate the data

Positive results – increased conversational turns

Negative results – no increase in conversational turns

Using UDL? Continue

Using PMI? Continue but slowly fade

Implement Milieu Teaching

Re-evaluate the data

Positive? Slowly fade MT and return to UDL or PMI

Negative? Seek outside supports and services

## Future Research

- Replicate the pilot study with closer precision for dissertation research
- Examine the effectiveness of each intervention separately using LENA data
- Compare the effectiveness of alternate decision rules for moving children through tiers