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

Sandra Hess Robbins, M.Ed.
srobbin4@kent.edu
Center for Excellence in Early Childhood Research and Training

KENT STATE
U N I V E R S I T Y

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

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

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

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

- 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

- Interrater reliability was measured using video observations and fidelity measures in Google forms

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

Composite View
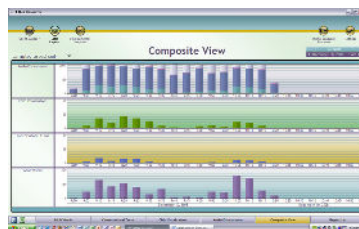
What can the data tell us??

- 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

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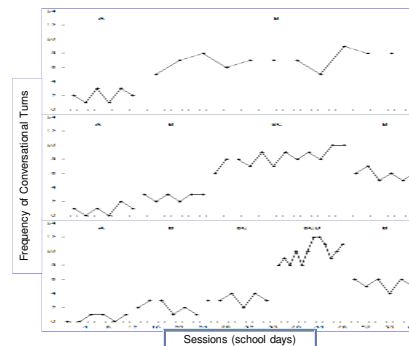
Begin with the implementation of a class-wide intervention (Tier 1). If children make little or no progress, increase intervention intensity and therefore, opportunities for turn taking, by adding a small group intervention (Tier 2). If a child still makes little or no progress, increase intensity by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