Preschool Programming for Children Who Are Deaf Or Hard Of Hearing

Catherine C. Carotta, Ed.D., SLP
Associate Director, Center for Childhood Deafness
Outline
• Child Profile: Assessment
• Home, Classroom & Therapy
• Early Childhood Best Practices
• A-V Preschool Classrooms

E. is an engaging and animated young girl. She loves art. She always commits to her art projects until they are prefect in her eyes! She also likes to re-enact stories from the weekend or her favorite books.

Child: E
• Age 4;9
• Normal birth and early development
• Regression in speech production: 18 mos.
• Decreased responses to sound: 24 mos.
• Severe to profound hearing loss dx: 2;11
• Right side CI: 3;6
• Hearing age: <3;0

18+ month gap?
Preschool Programming for Children
Who Are Deaf Or Hard Of Hearing

Speech Perception

ESP Monosyllable Examples: boot, book, boat, etc.
Mr. Potato Head Examples: Find Mr. Potato Head's blue shoes. Find his nose. Mr. Potato Head wants orange ears.

Assessment

Annual Communication Assessment

- Auditory Testing
  - Audiological Testing (HA or CI)
  - Speech Perception
  - Functional Auditory
- Language Testing
  - All Domains
  - Expressive & Receptive
- Speech Testing

Conditioned Assessment of Speech Production

<table>
<thead>
<tr>
<th>GF</th>
<th>RS</th>
<th>SS</th>
<th>%ile</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>50</td>
<td>1</td>
<td>&lt;2:0</td>
<td></td>
</tr>
</tbody>
</table>

Ertmer (2008)
### Child E: 4;9 mos.

<table>
<thead>
<tr>
<th>Vocab.</th>
<th>SS</th>
<th>%ile</th>
<th>LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPVT (Sign)</td>
<td>76</td>
<td>5</td>
<td>3;2</td>
</tr>
<tr>
<td>PPVT (Spoken)</td>
<td>41</td>
<td>&lt;0.1</td>
<td>&lt;2:0</td>
</tr>
<tr>
<td>EVT</td>
<td>80</td>
<td>9</td>
<td>3;5</td>
</tr>
</tbody>
</table>

## Child E: 4;9 mos.

<table>
<thead>
<tr>
<th>ACLC</th>
<th>Sign/Spoken</th>
<th>Spoken</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Element</td>
<td>88%</td>
<td>58%</td>
</tr>
<tr>
<td>2 Elements</td>
<td>90%</td>
<td>32%</td>
</tr>
<tr>
<td>3 Elements</td>
<td>60%</td>
<td>DNT</td>
</tr>
<tr>
<td>4 Elements</td>
<td>20%</td>
<td>DNT</td>
</tr>
</tbody>
</table>

### Single Word and Multiple Elements

- ACLC  1 Element: 88%/58%
- ACLC  2 Elements: 90%/32%
- ACLC  3 Elements: 60%
- ACLC  4 Elements: 20%
**Child E: 4;9 mos.**

<table>
<thead>
<tr>
<th></th>
<th>PLS-3</th>
<th>SS</th>
<th>%ile</th>
<th>LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>78</td>
<td>7</td>
<td>3;7</td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>63</td>
<td>1</td>
<td>2;8</td>
<td></td>
</tr>
<tr>
<td>TLS</td>
<td>67</td>
<td>1</td>
<td>3;1</td>
<td></td>
</tr>
</tbody>
</table>

SS: Standard Score (85-115=Average Range)

---

**Levels of Abstraction for Preschool Discourse**

- **Perceptual**
  - Language Distance
  - Levels I, II, III, IV

  - Level 1: 5th %ile
  - Level 2: 1st %ile
  - Level 3: 5th %ile
  - Level 4: 1st %ile

---

**Question Abstraction Examples**

- Level 1: 5th %ile
- Level 2: 1st %ile
- Level 3: 5th %ile
- Level 4: 1st %ile

---

Preschool Programming for Children Who Are Deaf Or Hard Of Hearing

E’s Continuum

Understanding of Auditory/Visual/Sign

<table>
<thead>
<tr>
<th>Auditory</th>
<th>AV</th>
<th>Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use of Sign and/or Spoken Language

<table>
<thead>
<tr>
<th>Oral</th>
<th>OS</th>
<th>Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use of Vocalizations and/or Words

<table>
<thead>
<tr>
<th>Words</th>
<th>VW</th>
<th>Vocalizations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use of Gestures and/or Pictures/Signs

<table>
<thead>
<tr>
<th>N/A</th>
<th>Picture/Signs</th>
<th>OS</th>
<th>GP</th>
<th>G</th>
<th>Gestures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Expectations - Performance

Name: E

Understanding of Auditory/Visual Language

<table>
<thead>
<tr>
<th>Expectations</th>
<th>A</th>
<th>AV</th>
<th>Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use Of Spoken Language and/or Sign

<table>
<thead>
<tr>
<th>Expectations</th>
<th>O</th>
<th>OS</th>
<th>GP</th>
<th>G</th>
<th>Gestures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
S.C.A.L.E.S. Focus

• Auditory: Home, Classroom, Peers, Therapy
  – ID of words in closed sets of same syllable
  – Answer Level 1-2 Questions
  – Follow directions with 3-4 critical elements

• Language: Home, Classroom, Peers, Therapy
  – Increased utterance length, possessive pronouns, Wh questions

• Speech: Home, Classroom, Peers, Therapy
  – Production of initial /f,k,g,s/, medial /n,t,d,k,g,f/
  – Natural intonation, phrasing, stress, volume

E’s: AV-A Strategy Zone

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>Av</th>
<th>AV</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Review</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Routine</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Where Will We Focus?

- Snack
- Playtime
- Nap
- Cooking
- Dressing
- Story
- Lunch
Goals

Auditory
3-4 Elements Auditory First

Speech
"F" in sentences

Language Requesting, Commanding Asking 3-5 word sentences

Dressing
Put on your pink shirt & blue pants.

Cooking
Let's see...I need the little star cutter.

Playing
He wants the little red cup.

I want the flower shirt.

Go tell sissy "come eat cookies!!"

Let's roll it fast...It fell apart....

Let's ask her, "do you want juice?"

Activity-Based Instruction

• Breakfast and Snacks
• Transitions
• Opening
• Story
• Social Skills and Scripts

Weekly Activity-Based Planning
**Preschool Programming for Children Who Are Deaf Or Hard Of Hearing**

---

**Thematic Planning**

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th>Child</th>
<th>Early Learning Content Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action Words:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attributes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Guided Observation and Conversation**

- **Learning Environment**
  - Auditory Environment
  - Listening Technology
  - Noise Reduction
  - Sound and Patterning
  - Activity-Based
  - Interactive
  - Active Learning

- **Communication Approach**
  - Communication Method
  - Language Approach
  - Initiation Support
  - Skill Level
  - File of Language
  - Peer-to-Peer Communication
  - Individual and Small Group

- **Climate of Engagement**
  - Positivity
  - Sensitivity
  - Orientation
  - Responsiveness
  - Friendliness
  - Goodness of Fit
  - Child-to-Adult
  - Child-to-Child

---

**Language Content/Concepts**

- **Teacher Language**
- **Student Language**

Preschool Programming for Children Who Are Deaf Or Hard Of Hearing

Instructional Meters

Routine

Activity

High

Low

Cognitive Complexity

Context

Receptive

Expressive

Language

Cognitive Complexity

High

Low

Instructional Meters

Routine

Activity

Linking A-V Cues

Natural Cues

Indirect Cues

Direct Visual/Verbal Cues

Direct Visual Language Cues

• Routine
• Repeat Phrase
• Say With Facial Expression
• Say With Speech Reading
• Point To The Word Or Picture

• Say With An Eye Gaze
• Say With Natural Gesture
• Say Shorter Phrase
• Say With Intonation/Stress

• Say Phrase Or Word With Sign

• Provide a Contrast/Choice
• Say With A Point To Object
• Ask Child to Repeat

• Say Phrase Or Word With Sign

• Routine
• Repeat Phrase
• Say With Facial Expression
• Say With Speech Reading
• Point To The Word Or Picture

Adapted from Dynavox Systems LLC

Learning Environment

Acoustic Environment

Listening Technology

Room Arrangement

Meaningful Transitions

Activity-Based

Routines

Active Learning

Initiative

Learning Environment
Listening Routines

- Acoustic Environment
- Listening Technology
- Room Arrangement
- Meaningful Transitions
- Activity-Based Routines
- Active Learning
- Initiative

Learning Environment

Meaningful Transitions
Preschool Programming for Children Who Are Deaf Or Hard Of Hearing

**Communication Approach**

- Communication Method
- Receptive-Expressive
- Imitation-Spontaneous
- Range of Complexity
- Peer-Peer Communication
- Individualized Expectations

**Communication Characteristics and Strategies**

- Rate, Volume, Intonation
- Repetition, Context
- Auditory Strategies
- Language Complexity
- Processing Time
- Multiple Speakers
Communication Characteristics And Strategies

Speech/Auditory Strategies

Climate of Engagement

- Nurturing
- Responsive
- Orientation
- Friendliness
- Sensitivity
- Goodness of Fit
- Child-Adult
- Child-Child
Preschool Programming for Children Who Are Deaf Or Hard Of Hearing

Culture Of Engagement

Peer-Peer Support

Story Time
References


References


Catherine C. Carotta, Ed.D., SLP
Boys Town National Research Hospital
555 North 30th Street
Omaha, NE  68131
cathy.carotta@boystown.org