Enhanced Milieu Teaching: Setting the Foundation for Communication

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Agenda for today

- Introduction
  - Historical and Research context

- Setting the foundation for Communication
  - What is EMT?
  - Setting up an interactive context
  - Notice and Respond to communication

- Modeling and Expanding Play and Language
  - Modeling and expanding play
  - Modeling and expanding communication targets

- Strategies for Eliciting communication
  - Time delay strategies
  - Prompting strategies

- Parent training
  - Teach
  - Model
  - Coach
  - Review

- EMT in different languages
  - Strategies
  - Ideas

- Review
Introduction

• Enhanced Milieu Teaching is an evidence-based intervention
  – 20+ years of research.

• EMT...
  – is naturalistic
  – is conversation-based
  – uses child interests and initiations as opportunities to teach
  – designed for the every day context
Example of intervention progress
Parent implementing the strategies
Positive effects across settings

- Increases child use of language targets
  - Early syntactic forms (Kaiser & Hester, 1994)
  - Moderately complex syntax (Warren & Kaiser, 1986)
- Increases child frequency of communication (Warren et al, 1994; Kaiser et al, 1993)
• Parents can learn a range of strategies to criterion levels
  – Environmental arrangement (Alpert & Kaiser, 1992; Hemmeter & Kaiser 1990)
  – Modeling language targets (Hancock & Kaiser, 2002; Roberts & Kaiser, 2012)
  – Prompting target production using MT techniques (Kaiser, Hancock & Nietfeld, 2001; Kaiser & Roberts 2012)
• Parents can generalize these strategies to home interactions with their children (Hancock & Kaiser, 2002; Kaiser & Roberts, 2012)
• Parents maintain their newly-learned skills over 6-18 months (Kaiser, et al 2001).
• When Parents Learn New Strategies, Children Learn New Skills
Study 1: Kaiser & Roberts (2013)

- N=73
- CA 44.75 Months (3.7 years)
- IQ 66
- SICD-R 25 Months
- SICD-E 24 Months
- MLU 1.58

- 45% children with Down syndrome
- 30% DD
- 25% other including PDD
- 60 % male
Study 1: Kaiser & Roberts (2013)

- Children randomly assigned to treatment group
  - Parent + Therapist
  - Therapist

- Repeated observations in each group
  - Baseline (5-7)
  - Treatment (24 or 36 sessions)
  - Home Generalization and Maintenance (12 observations)

- Longitudinal assessment of development
  - Pre, Post I-IV (at 6 month intervals)
Study 1: Kaiser & Roberts (2013)

- Children experience more language growth when their parents are trained.
## Study 2: Children with Language Impairments

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Randomized Clinical Trial (NCT01975922) 45 Intervention (Parent + Therapist), 43 Control</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>EMT with Play Skills 24 sessions (14 clinic, 10 home across routines) Parent + Therapist</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>Pre, 6 wks, 12 wks, 18 wks (end of intervention) Standardized, observational, parent report</td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>Average age: 31 months Average Bayley Cognitive Score: 85 Gender: 83% male PLS-4: 70</td>
</tr>
</tbody>
</table>
Study 2: Children with Language Impairments

Number of Different Words

Start
Month 1
Month 2
Month 3
Treatment
Control

19
32
47
55
18
26
32
38

MCDI
T: 264
C: 215
D = 0.4

d = 0.2

d = 0.5
Study 2: Children with Language Impairments

<table>
<thead>
<tr>
<th>Measure</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive language (PLS-4)</td>
<td>84</td>
<td>80</td>
</tr>
<tr>
<td>Receptive language (PLS-4)</td>
<td>86</td>
<td>77</td>
</tr>
<tr>
<td>Expressive vocabulary (EOWPVT-3)</td>
<td>76</td>
<td>70</td>
</tr>
<tr>
<td>Receptive Vocabulary (PPVT-4)</td>
<td>94</td>
<td>86</td>
</tr>
</tbody>
</table>

Effect size: $d = 0.3$
Study 2: Reduction of language delays

Children with scores in the average range on the PLS-4

- Control: 65%
- Intervention: 35%
What is EMT?

- A set of tools to help facilitate a child’s communication growth:
  - Arranging the environment (EA) to set up an interactive context
  - Noticing and responding
  - Modeling play
  - Modeling communication targets
  - Prompting strategies
  - Teaching in context where communication is needed now

- EMT is a strategy for improving adult-child communication NOW!
EMT Strategies

- A set of tools to help facilitate a child’s communication growth:
  - Setting up an interactive context between the adult and child through play
  - Noticing and responding to child communication; balancing verbal turns
  - Modeling and expanding play
  - Modeling and expanding communication
  - Time Delay strategies
  - Prompting strategies
An interactive context: Notice and Respond
Strategy 1: Play and Engage

- The first goal is to set up an interactive context between the adult and child.
- Communication develops on a platform of shared joint attention and engagement.
  - Social interaction between child and adult
  - Play with objects and partner
  - Routines where communication is functional
Why play and engage?

• Children learn best when they are engaged and interacting with a communication partner.
  – Play facilitates engagement and interaction

• Children are more likely to be engaged and learn language while doing activities they enjoy.

• When the adult plays with the child at his or her level, the adult optimizes the opportunity for communication to occur.
How to play and engage?

- Be at the child’s level.
- Follow the child’s lead
  - do what they are doing
  - let them go first if possible.
- Avoid directions and questions
  - let the child lead the play
  - let the child initiate the communication.
- Choose toys that are interesting and engaging.
  - At child’s current play level
  - Be aware of how materials are positioned
- Put away toys that aren’t being used
  - Substitute undesired activities with desired activities.
Strategy 2: Notice and Respond to All Communication

All children are communicating **now**

a. How?

- **Prelinguistic**
  - Point
  - Show
  - Give
  - Vocalizations

- **Linguistic**
  - Signs
  - Pictures
  - Symbols
  - Words

  *Reach*
  - Lifts arms up
  - Shakes head

b. Why?

- **Requesting**
- **Commenting**

**KID Talk**
How is the child communicating?

Watch the video and look for:

1. How is the child communicating now?
2. Why is the child communicating now?
Notice and Respond to Communication

• Notice and respond every time the child communicates.
  – Respond by talking about what the child is doing.

• Language is most meaningful when it’s:
  – related to what the child is doing
  – in response to what the child is communicating.
Why Notice and Respond?

- Noticing and responding teaches the child that their communication is **important to you**
- By acknowledging *all communication* and attempts you reinforce the child for communicating.
- The more the child communicates, the more practice they receive and the easier communication becomes.
How to notice and respond?

- **Repeat** the word the child said
- Or **add words** to what they said
  - Match to the child’s meaning
- **Point** to the object or action as you respond
- Respond to **vocalizations** if they are communicative
Strategy 3: Take Turns

- Take turns communicating with the child.
- Allow time for the child to communicate.
- Play a game of “communication catch”
  - Child communicates
  - Adult responds (and waits)
  - Child communicates
  - Adult responds (and waits)
- Only say something after the child communicates.
Why take turns?

• It allows your child more opportunities to communicate.
  – More opportunities = more practice = growth in communication skills.

• It teaches your child how to have a conversation
  – Child communicates
  – Adult communicates and WAITS, which signals to the child that it is his or her turn to communicate
Strategy 4: Mirror and Map

• Use mirroring and mapping when the child is **not** communicating
  – nothing to respond to
  – no communication catch

• **Mapping must come after** mirroring.

• **First** imitate the action and **then** label the action with words, if possible, **point** as you label
  – Child: {feeds baby}
  – Adult: {feeds baby} we feed the baby some milk.
How and When to Mirror and Map?

- Mirror **close** to the child’s actions to make language more salient.
- Avoid mirroring behaviors that are unacceptable (e.g., throwing toys, hitting).
- Balance mapping and playing (e.g., don’t over map).
Let’s Review

- Do what the child does, following his lead.
- Make statements (no questions, no directions)
- Respond when the child communicates
  - Repeat, Add words, Add point
- Talk about what the child is doing.
- Wait for communication.
- Talk after the child talks.
- Mirror and Map
Goals for Phase 1

• Matched turns > 75% (75% of what you say should be “matched” to your child).
• Fewer than 5 child communication attempts were missed.
Modeling and Expanding Play and Language

EMT Workshop 2
What is EMT?

- A set of tools to help facilitate a child’s communication growth:
  - Setting up an interactive context between the parent and child
  - Noticing and responding to child communication
  - Modeling and expanding play
  - Modeling and expanding communication targets
  - Time Delay strategies
  - Prompting strategies
Why do we teach play?

- Linking words with engaging activities maximizes opportunities for teaching language.
- Choosing toys that are interesting keeps the child engaged.
- Expanding play activities allows more language modeling and facilitates language learning.
- Teaching play can increase engaged time resulting in more opportunities to teach.
Picking good toys

- Pick toys that the child finds *interesting*
- Use toys that promote play that the child is *familiar* with
- Add toys to extend and expand routines
- Combine toy sets
- Play with toys in more ways that just how they were intended to be used
Play Goals

1. **Extend** the time the child plays with a toy.
2. Expand the different **actions** the child does with the same toy.
3. Expand the types of **different toys** the child uses.
When to model new play?

- When the child is doing the same action with the same object multiple times.
- When the child is doing an undesired action with the toy (e.g., eating play-doh, hitting the baby, mouthing pretend food).
- When the child has stopped playing or you feel that the interaction is faltering.
- The child doesn‘t know how to use the toy.
How to model new play actions?

• Add a different action or an object to the play.

• Set a new toy object in sight
  – WAIT and see if the child shows interest.
  – If the child shows interest in the object, but does not play with it then MODEL a new play action with the object.

• As always, follow the child’s lead and if the child is not interested, try again later.
Why model language?

• Children learn language through modeling.
• Contingent modeling in response to a child’s communication the most powerful form of modeling.
• Simplifying language to match the child’s language targets helps the child learn language more quickly.
  – Easier to imitate
  – Saliency is increased
Language Goals

1. Increase the rate at which the child communicates

2. Increase the diversity of communication

3. Increase the child’s independence
   • Increase spontaneous communication
   • Decrease the dependence on adult cues
When to model new language?

- After the child communicates (responding by adding a word)
  - Respond with a language target and a point
- When you are doing the same action or have the same object as the child. (mirroring and mapping)
  - Child: \{drives car\}
  - Adult: \{drives car\} car. (point to car)
The child is **not** communicating or playing, take an **extra** turn
- When you model a new play act, label what you are doing
- Hand the child an object relevant to the play and label

These extra turns must be paced and used infrequently to keep balanced turns, once they start playing, mirror and map
What language to model?

- We pick targets based on the language the child is already using and what the child should learn next.

- How does your child communicate now?
  - Gestures, vocalizations
  - Single words
  - 2 words
  - 3 words
  - 4 words
Choosing Communication Targets

<table>
<thead>
<tr>
<th>Child Communication</th>
<th>Language to Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current:</strong> Vocalizations, no gestures</td>
<td>Expand vocalizations, model gestures, pair gestures with single words, one –two word utterances</td>
</tr>
<tr>
<td><strong>Target:</strong> single words</td>
<td></td>
</tr>
<tr>
<td><strong>Current:</strong> Vocalizations &amp; gestures</td>
<td>Expand vocalizations &amp; gestures with words; one-two word utterances</td>
</tr>
<tr>
<td><strong>Target:</strong> single words</td>
<td></td>
</tr>
<tr>
<td><strong>Current:</strong> Gestures, vocalizations, some single words</td>
<td>one and two word utterances; expand single word utterances; model verbs</td>
</tr>
<tr>
<td><strong>Target:</strong> single words</td>
<td></td>
</tr>
<tr>
<td><strong>Current:</strong> 50+ words (including a variety of verbs)</td>
<td>Two word utterances; expansions that combine words the child is already using; early two word utterances</td>
</tr>
<tr>
<td><strong>Target:</strong> two words</td>
<td></td>
</tr>
<tr>
<td><strong>Current:</strong> Two word utterances with different types</td>
<td>3-5 words.</td>
</tr>
<tr>
<td><strong>Target:</strong> 3 words</td>
<td></td>
</tr>
</tbody>
</table>
Modeling Language Targets

- 50% of what you say should be one of child’s targets
- 50% should be **slightly** higher than the child’s current targets (proximal)
  - 1-2 words above his/her level
  - All words should be teaching words (nouns, verbs, modifiers)
- Diversity of adult Target language
  - 1 word child targets = Adult uses 25 different words
  - 2 word child targets = Adult uses 50 different words
Expanding communication

• When the child communicates, respond by imitating his/her communication and adding target words.
  – Child: {points to ball}
  – Adult: {points to ball} ball.
  – Child: ball
  – Adult: roll the ball

• Expansions immediately connect the child’s communication to additional new language.
Expanding Gestures

• Point/reach:
  – Child: {points to/reaches for baby}
  – Adult: {points to baby/reaches for baby} [target]

• Show
  – Child: {hold up block}
  – Adult: {points to block} [target]

• Give
  – Child: {gives adult car to drive}
  – Adult: {takes the car} [target]

• Signs
  – Child signs ball
  – Adult signs and says big ball
Expanding Vocalizations

• Vocalizations referring to a specific word
  – Child: {says “ah” and is pointing to cup}
  – Adult: {point to cup} [target].

• Vocalizations not referring to a specific word
  – Child: {says “ah” and is walking cow}
  – Adult: {walk the cow} [target].
How are you expanding?

- Remember to only expand 40% of the time
- The other 60% of the time, make related, target level responses
  - This is a time to introduce/teach new related language
Let’s Review

• Do what the child does.
• Model new play actions.
• Model new target language with these actions.
• Expand the child’s communication with target words.
Using Time Delay (TD) Strategies to Increase Communication
What is EMT?

- A set of tools to help facilitate a child’s communication growth:
  - Setting up an interactive context between the parent and child through play
  - Noticing and responding to child communication; balancing verbal turns
  - Modeling and expanding play
  - Modeling and expanding language
    - Using Time Delay (TD) strategies
    - Using prompting strategies
What are TD strategies?

- Non-verbal situations that encourage the child to communicate with you.
Providing small or inadequate portions of preferred materials.
EA Strategy 2: Assistance

- Creating situations in which the child needs the adult’s help.
EA Strategy 3: Pause in Routine

- Setting up a routine in which the child expects certain actions and then waiting before doing the expected action.
EA Strategy 4: Choice Making

- The adult holds up two objects and waits for the child to communicate about which item he/she wants.
Why use TD strategies?

• Provide the child with more opportunities to practice communicating.
  – Increases the child’s rate of communication

• Provide you with more opportunities to reinforce and teach new language by
  – Responding and
  – Expanding the child’s communication

• Provide the child with more opportunities to use joint attention gestures
  – Give or Point
How to use TD strategies?

1. Set up the opportunity to encourage the child to communicate by using an TD strategy.

2. Wait until the child communicates (gestures, JA instance, vocalizes, says a word).

3. Expand this communication with a target.

4. If the child doesn’t communicate (gestures, JA instance, vocalizes, says a word) interest, put the items down, Don’t label.
When to use TD strategies?

- When the child is not communicating frequently.
- Some strategies work better than others for different children.
  - Avoid temptations that frustrate the child
More Practice: What do you see?
Let’s Review

• Use TD strategies to set up an opportunity for the to communicate when he/she is not communicating at a high rate.
  – Inadequate portions
  – Assistance
  – Pause in routine
  – Choice making

• **Expand** this communication to include a **target**.
EA Goal

• 80% of TD strategies used correctly (e.g., waited for communication and then labeled with a target).

• Must wait for communication before labeling it with a target to be considered correct.

• Must abandon the TD, set it down and do not label, if the child did not want the item to be considered correct.
Prompting Communication

EMT Workshop 4
What is EMT?

• A set of tools to help facilitate a child’s communication growth:
  √ Setting up an interactive context between the parent and child through play
  √ Noticing and responding to child communication; balancing verbal turns
  √ Modeling and expanding play
  √ Modeling and expanding communication
  √ Using Time Delay strategies
    – Using prompting strategies
What is a prompt?

• A signal to the child to do or say something.
• There are 4 types of language prompts:
  – Time delay
  – Open questions
  – Choice questions
  – Model procedure
Time Delay

• An overt non-verbal cue for the child to use language.

• The adult uses an expectant look and waits for the child to verbalize before performing the expected action or giving the child a desired object.

  – Most environmental arrangement strategies may be used as a time delay if used with an “expectant look”

• Time delay offers the least language support.
Open Question

• The adult asks an open question (e.g., not single correct answer).
• Open questions offer a little more support by verbally cueing the child to verbalize his or her requests.
• What next? Where should the car go? Tell me what you want. What should the babies do?
Choice Question

- The adult asks an choice question that has no single correct answer.
- Choice questions offer even more support by including the answer in the question.
Model Procedure

• The adult tells the child exactly what to say.
• The model procedure offers the most adult support because it tells the child exactly what to say.
• You can leave off the word “say,” on the second prompt, if the child is echoing that part of the model.
Why Prompt Language?

• Gives the child an opportunity to practice communication targets during a highly motivating and salient context.

• Gives the child functional practice and reinforcement for communication.
How to Prompt Language?

• Prompt to requests by using the least supportive and most appropriate strategy.
  – Follow through with more supportive prompts if needed.

• Episodes should be brief and positive and should always result in the child receiving the requested object or action.
  – Use prompts in order of least to most support.
When to Prompt Language?

- Only when the child is requesting and **not** using a target.
- Only as one of the many tools of Enhanced Milieu Teaching
- Not more than once per one to two minutes.
  - Too many demands may cause the child to become frustrated.
- Discontinue prompting if the child loses interest
The Prompting Sequence

- Always go from least to most support.
  - Time delay → open → choice → model
  - You cannot work backwards
- Stop prompting after the child says exactly what you wanted him to say.
- If the child is not responding, give him/her increasing support.
  - you must always give the model prompt
- Give up to 2 prompts at every level.
  - Depending on when the child says the target and their attention and frustration
The Prompting Sequence

- You must give 2 models if the child does not respond correctly to the other prompts.
- Give the child enough time to respond (5 seconds) before giving another prompt.
- After the child has said what you wanted him/her to say or you have given two model prompts
  - **Expand** if the child says the target
  - **Repeat** if the child does not say the target
Time Delay
(Hold up car and plane and wait) OR
Child Requests object

Ask a Real Question
("Say 'what do you want'?")

Responds but not at the target level
Give Model
("Say 'drive car'")

Incorrect Response or No Response
Give Model Again
("Say 'drive car'")

Incorrect Response or No Response
Give Corrective Model
("drive car")

Correct Response
("drive car")

Correct Response
("drive car")

No response/ doesn't make a choice
Give a Choice
("Say 'drive car or fly plane'")

Correct Response
("drive car")

Correct Response
("drive car")

Incorrect Response or No Response
Give Model
("Say 'drive car'")

Correct Response
("drive car")

Correct Response
("drive car")

Incorrect Response or No Response
Give Model Again
("Say 'drive car'")

Correct Response
("drive car")

Correct Response
("drive car in garage")

Give action or object
(give car to drive)

AND
Give action or object
(give car to drive)

AND
Give action or object
(give car to drive)

AND
Give Corrective Model
("drive car")

AND
Give Corrective Model
("drive car")
Let’s Practice

• Watch examples of prompting sequence
Let’s Review

• Prompt the child’s communication targets when he or she is requesting and not using a target.
• Use the prompting strategies that best fit the child.
• Use prompting sparingly so the child does not become frustrated.
• Discontinue prompting if the child loses interest.
Why Train Parents?
Why Train Parents?

- Parents are children’s first language teachers.
  - Functional communication is learned at home, with caregivers, in everyday activities.
- Amount of parent talk directed to children is associated with more positive language development (Hart & Risley, 1995).
- Parent responsiveness and language modeling are associated with better language development (Kaiser et al., 2001; Yoder & Warren, 2004).
Why Train Parents?

• Parent may not have the expertise necessary for navigating and implementing an AAC system (Starble et al., 2005)

• Parents have consistently identified their lack of inclusion in the selection and training of an AAC system as an issue in service delivery (Angelo, 2000; McNaughton et al., 2008; Bailey, Parrette, Stoner, Angell, & Carroll, 2006; Parette, Brotherson, & Huer, 2000; Starble, Hutchins, Favro, Prelock, & Bitner, 2005)
Review of Parent Training Research

• A recent meta-analysis found that parent-implemented language interventions are effective for improving child communication (Roberts & Kaiser, 2010).
When Is Parent Training a Good Idea?

- Parent is interested.
- Parent has time and energy to commit.
- Parent-therapist relationship is positive and strong.
- Therapist has an effective intervention approach for the child that can be used in natural environments.
- Therapist has skills for teaching parents.
- Therapist has time and flexibility for parent training.
Build Relationship With Parents

- Prior to intervention openly discuss expectations for therapy.
  - Discuss parent priorities for child goals and their own goals
  - Discuss the positive outcomes of parent training (compared to therapist alone)
  - Discuss coaching and feedback
    - What type of feedback & coaching is most helpful to parent
    - What you will be doing to monitor progress

- Develop a relationship as co-interventionists.
  - Ask parents about their experience in each session,
  - Invite parent to evaluate child’s progress
  - View the parent as the expert on their child
  - Make plans for sessions together
Skills Needed for Parent Training

• Knowledge of the intervention
  – Skilled doing the intervention with children
  – Can describe skill and rational fluently, give examples, answer questions

• Communication with parents
  – Ask open ended questions and wait time
  – Use understandable language
  – Have generally positive, accepting and supportive affect

• Coaching and feedback skills
  – Analyze parent implementation
  – Coach to support parent
  – Give feedback that supports parent efforts and teaches skill
Implementation Strategy: Teach-Model-Coach-Review
Step 1: Teach a Strategy

- Workshops – 1 hour parent session that provides an overview of a strategy with the following format
  - Definition of the strategy
  - Rationale for the strategy
  - Video examples of the therapist using the strategy with the child and the child responding positively to the strategy
  - Practice the strategy through role playing and worksheets
  - Criterion or expectation for parent
Step 2: Model

- Intervention sessions – 45-60 minutes total
  - Quick review of strategy and collaborative plan for the session (toys, activities)
  - Therapist models the strategy and narrates when she is doing the target strategy
Step 3: Coach

- Intervention sessions – 45-60 minutes total
  - Parent practices the strategy with the child and the therapist coaches the parent.
    - Praise (e.g., “great responding,” “nice waiting”)
    - Specific constructive feedback (e.g., “Next time he points to the ball I want you to point to the ball and say ‘ball.’”)

[Image of three people playing with toys]
After the practice session the therapist:

- Asks the parent how he or she feels about the session and target strategy
  - “What did you think about today’s session?”
- Describes how the parent used the target strategy
  - “I love how you responded every time Luke communicated, even when he pointed you gave him a word for what he was pointing to”
- Connects parent use of the strategy with child’s communication
  - “When you expanded when Mary said ‘drive’ to ‘drive the car,’ she said ‘drive car!’ You taught her to say ‘drive car’ today!”
Additional Implementation Strategies
Make a Plan for Everyday Use

- Identify family routines and child preferred.
- Choose examples of communication targets that map onto home routines.
- Refer to home routines throughout the training process when teaching and practicing new skills.
- Get parent feedback about use of strategies at home.
- Train at the home whenever you can.
Monitor Parent and Child Progress

- Develop goals and criteria for parent and child behaviors
- Develop specific, easy to count measures
- Collect data
  - Every 4th session
  - Parent use of strategies
  - Child progress
- Chart data with criterion lines
- Review data with parent
Ask for Parents for Feedback

• Check for understanding throughout each teaching and practice session.
• Invite parent questions and comments.
• Determine if method and style of coaching are helpful.
• Ask parents to summarize what they have learned.
• Ask parents how each session went.
Discussion and Questions

• For more information:
  – www.kidtalk.org