



Teaching Communication in Natural Environments: Supporting Parents and Peers as Partners

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Today's Session

- Review naturalistic teaching principles
- Present overview of and data from two research projects using naturalistic teaching principles
 - Parent-Implemented Enhanced Milieu Teaching (EMT)
 - Social Competence in Peers (SCIP)
- Discuss the implications of these research programs for SLPs doing evidence based practices
- Answer questions from the audience

Naturalistic Principles

- Children learn to communicate by communicating
- All children are communicators, but not all children are *effective* communicators with all partners
- Natural environments provide a motivating context for children to communicate and opportunities to learn new forms and functions of communication from partners



Naturalistic Principles

- Children need partners for communication
- Partners are communicators first, teachers second
 - The role of partner is different from the role of teacher/therapist
 - Relationships matter in communication between children and their partners
 - The quality of partner communication matters
- Most partners need systematic training and support to be effective communicators and teachers with children who have significant language impairments

The Bottom Line: The goal of all communication intervention is communication in natural environments



Naturalistic Principles

- Partner-implemented or mediated naturalistic communication intervention is a secondary intervention
 - Most children with significant language impairment also require direct teaching from a therapist
 - Secondary interventions teach specific skills in context, support generalization, and insure children access to improved communication with important partners
- Naturalistic interventions including partners require specific skills from the SLP or teacher
 - Environmental analysis and arrangement
 - Teaching partners in context
 - Choosing child goals that match the communication opportunities and partner level of support

Ann P. Kaiser, Megan Y. Roberts, and the Milieu Teaching Group
At Vanderbilt University

ENHANCED MILIEU TEACHING

What is Enhanced Milieu Teaching?

- EMT is a naturalistic, conversation-based intervention that uses child interests and initiations as opportunities to model and prompt language in everyday contexts.
- EMT can be used throughout the day as part of the everyday interactions.
- EMT is an evidence-based intervention.

EMT Strategies

- A set of tools to help facilitate a child's communication growth
 - Part 1: Setting the Foundation for Communication
 - Play and Engage
 - Notice and Respond
 - Take Turns
 - Mirror and Map
 - Part 2: Modeling and Expanding Play and Communication
 - Modeling and Expanding Play
 - Modeling Language
 - Expanding Communication
 - Part 3: Using Environmental Arrangement (EA) Strategies to Promote Communication
 - Part 4: Using Prompting Strategies to Promote Practice
 - [Example](#)

Strategy 1: Play and Engage

- Communication develops on a platform of shared joint attention and engagement.
 - Be at the child's level.
 - Do whatever the child is doing.
 - Follow the child's lead.
 - Avoid directions and let the child lead the play
 - Avoid questions and let the child initiate the communication.
 - Choose toys that are interesting and engaging.
 - Put away toys that aren't being used.
 - Substitute undesired activities with desired activities.

Strategy 2: Notice & Respond

- 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 OR in response to what the child is communicating.

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.



Strategy 4: Mirror and Map

- A strategy to use when the child is not communicating.
 - Mirroring: adult imitates the child's nonverbal behaviors.
 - Mapping: adult "maps" language onto these actions, by describing these actions.
- Example
 - Child feeds the baby.
 - Adult feeds the baby and says "feed the baby"

Strategy 5 :Teach Language in Play Routines

- Play provides a symbolic context for language: objects, verbs, sequences of actions
- Routines have a predictable sequence (a beginning, middle and end) that can scaffold sequential comments.
- Children learn language more readily during small routines in play because they know what actions (and words) will come next.
- Examples of easy play routines
 - Scoop beans, pour beans, dump beans.
 - Person in car, drive car, get out of car

Strategy 6: Model Target Language

- Children learn language through modeling.
- Contingent modeling that is in response to a child' s communication is 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, easier to understand

Strategy 7: Expand Communication

- An expansion is imitating what the child communicated and then adding more words.
 - Expansions immediately connect the child's communication to additional new communication.
- The most powerful expansion includes one of the child's communication targets.
 - Expansions help the child learn new vocabulary and talk in more complex sentences.

Strategy 8: Environmental Arrangement to Promote Communication

- Non-verbal cues-in-context that encourage the child to communicate.
 - Offering choices
 - Pausing within a routine
 - Waiting with a cue
 - Inadequate portions
 - Need for Assistance
- **Environmental Arrangement Steps**
 1. Set up the opportunity to encourage the child to communicate by using an EA strategy.
 2. Wait until the child communicates (with sounds, gestures or words)
 3. Expand child' s communication form by modeling a target.

Strategy 9: Prompt Language

- A prompt is a signal to the child to do or say something in response to his request
 - Environmental Arrangement/Time Delay
 - Begins with an EA strategy
 - Hold up two trucks and wait
 - Open questions
 - What do you want to do?
 - Choice questions
 - Drive bus or drive truck?
 - Model procedure
 - Say " I drive truck."

Least Support
↓
Most Support

Language Goals

1. Increase the rate at which the child communicates.
2. Increase the diversity of communication.
3. Increase complexity of communication
4. Increase the child's independence.
 - Increase spontaneous communication
 - Decrease the dependence on adult cues

In EMT children have individualized targets



Ann P. Kaiser

RESEARCH ON PARENT IMPLEMENTED EMT

Parent- Implemented Enhanced Milieu Teaching

- **Program of research**
 - NICHD program project on children with intellectual disabilities; IES Goal 3 projects, Autism Speaks, OSERS
 - Broad population of children: ID, DS, ASD, language delayed, children at-risk due to poverty, children with CLP
 - Multiple methods: group, single subject
- **Based on two assumptions**
 - Communication is learned in interactions with partners
 - Changing partner support for communication can change child outcomes
- **Goals:**
 - Improving generalized communication outcomes for children
 - Understanding the conditions in which communication and language are learned

Can parents learn, generalize and maintain use of EMT strategies?

- **Parents learn** a range of strategies to criterion levels.
 - Environmental arrangement (Alpert & Kaiser, 1992; Hemmeter & Kaiser 1990)
 - Responsive interaction strategies (Hancock & Kaiser, 2002; Kaiser et al., 1996; Roberts, Kaiser et al submitted)
 - Modeling language targets (Hancock & Kaiser, 2002)
 - Prompting target production using MT techniques (Kaiser, Hancock & Nietfeld, 2001; Roberts et al submitted)
- **Parents 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; Kaiser & Roberts, 2012).

What are the effects of training parents on their children's language use and development?

- **Increases child use of language targets**
 - Vocabulary (Alpert & Kaiser, 1992; Hemmeter & Kaiser 1990, Kaiser et al. 1993; Scherer & Kaiser, 2012; Kaiser & Roberts, 2012; Wright et al. 2013)
 - Early syntactic forms (Kaiser & Hester, 1994; Roberts et al. submitted)
- **Increases child frequency of communication** (Kaiser et al. 1993; Kaiser & Roberts, 2012; Wright et al. 2013)
- **Results in generalization across settings and people,** (Kaiser & Roberts, 2012; Wright et al., 2013)
- **Results in maintenance of newly learned targets** (Roberts et al., submitted; Kaiser & Roberts, 2012)

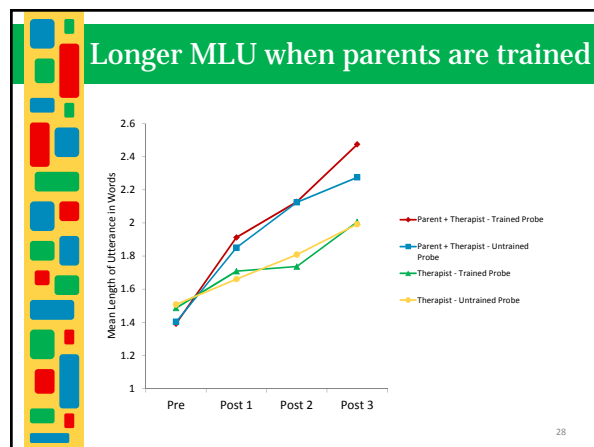
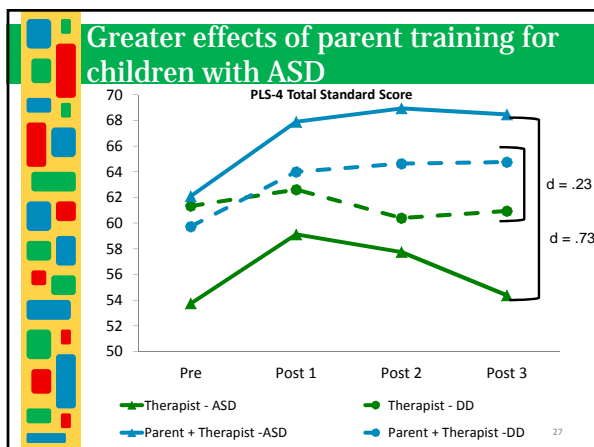
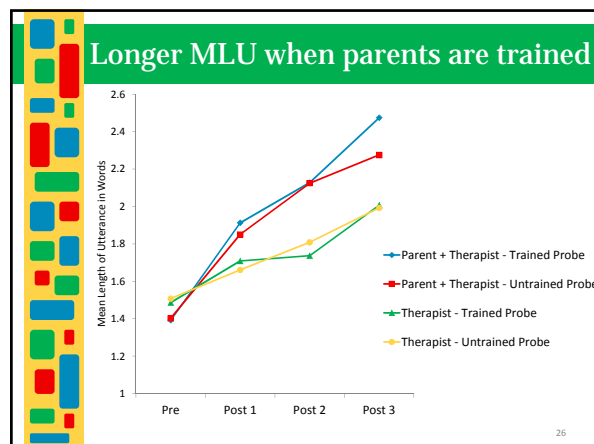
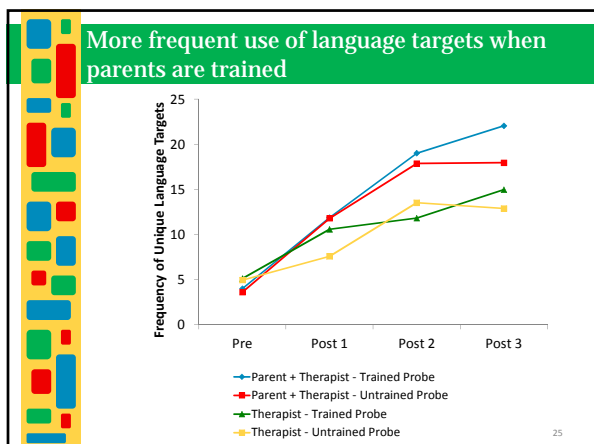
Two RCTs Parent-Implemented EMT

- Can parents learn, generalize and maintain use of EMT strategies?
- What are the effects of training parents on their children's language use and development?
- Study 1 : Preschoolers with Intellectual Disabilities
- Study 2: Toddlers with Receptive and Expressive Language Delays

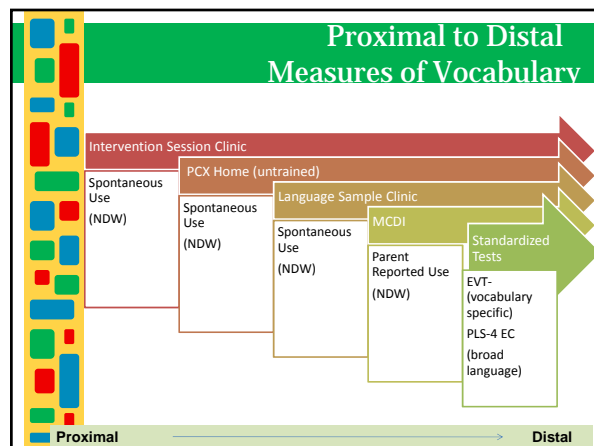
Preschool Children with Intellectual Disabilities

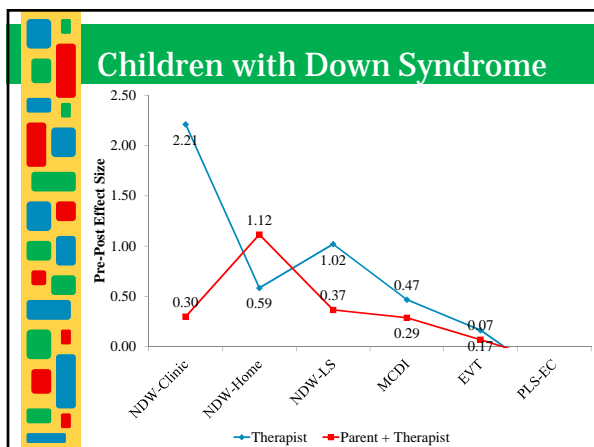
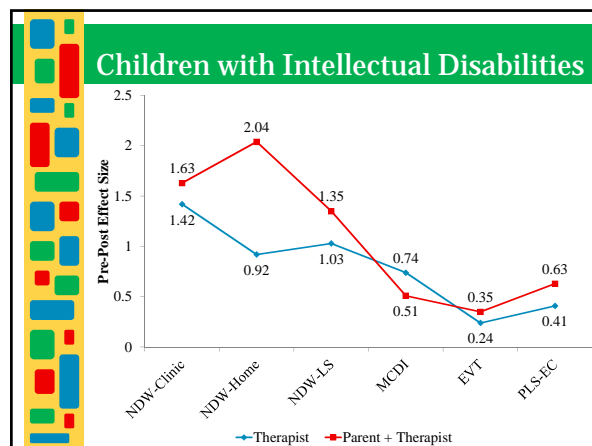
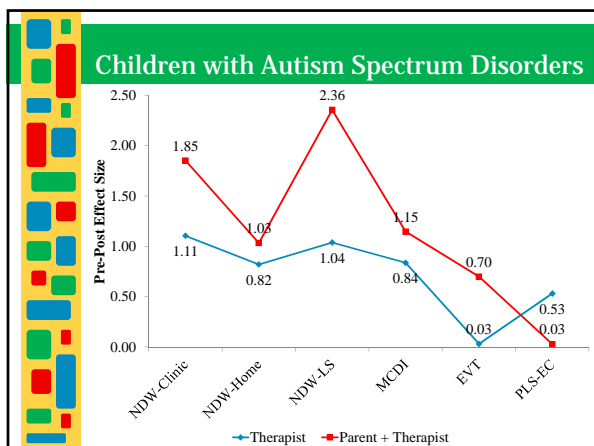
Study Component	Description
Design	Randomized Clinical Trial 38 Therapist Condition, 39 Parent +Therapist
Intervention	EMT with training across activities, settings, partners 36 sessions (24 clinic, 12 at home across routines)
Measures	Pre, Post, 6 months, 12 months Standardized, observational, parent report
Participants	Average age: 40 months Average Leiter: 70 Gender: 74% male PLS Total: 60 Disability Type: DD (55%), ASD (22%), (DS (23%)

Kaiser & Roberts, 2013 NICHD HD45745-02 24



- ### EMT effects vary across populations and measures
- Gradient of effects from proximal to distal measures
 - Setting (Clinic, home)
 - Degree of support (Clinic, trained parent, LS, testing)
 - Variations with in home, not examined, but likely
 - Spontaneous (child driven) to elicited (test driven)
 - Population specific indicators
 - Size of effects from treatment
 - "Spread of effects" from proximal to distal

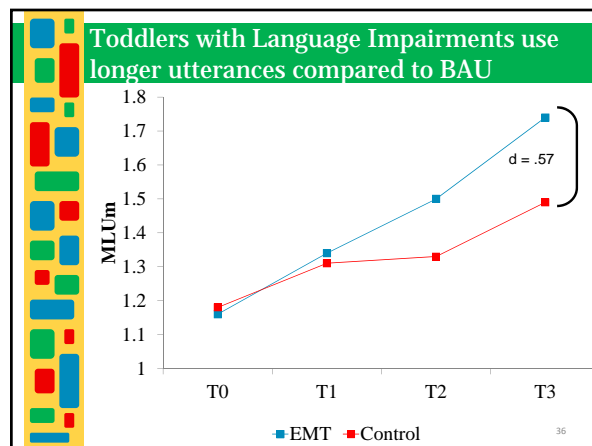
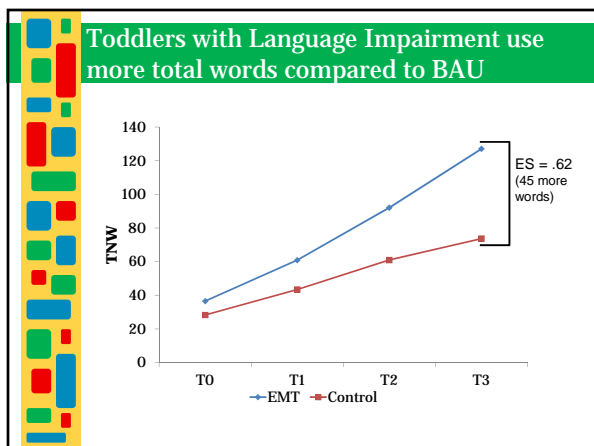


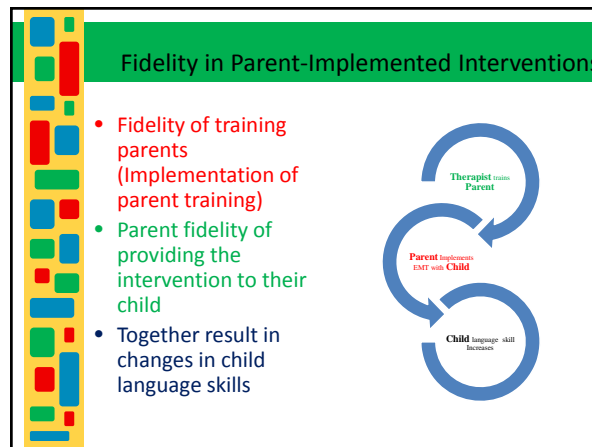
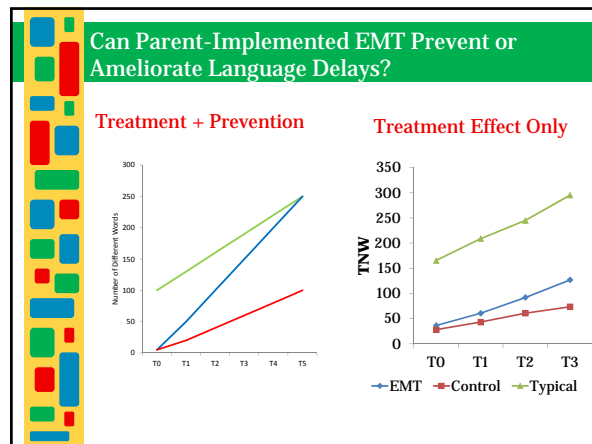
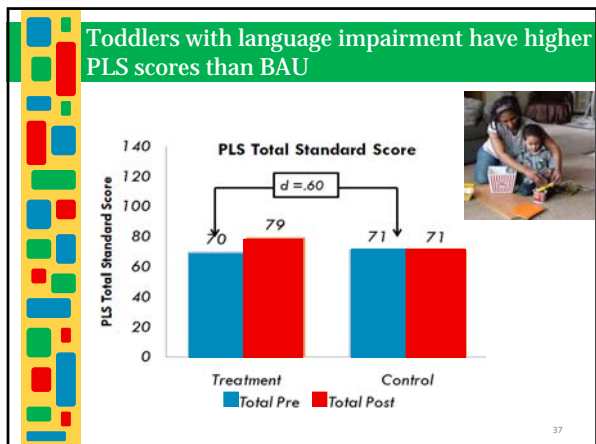


Toddlers with Language Impairments

Study Component	Description
Design	Randomized Clinical Trial 16 Intervention, 18 Control
Intervention	EMT with Play Skills 24 sessions (14 clinic, 10 home across routines) Parent + Therapist
Measures	Pre, 6 wks, 12 wks, 18 wks (end of intervention) Standardized, observational, parent report
Participants	Average age: 31 months Average Bayley Cognitive Score: 85 Gender: 83% male PLS-4: 70

Roberts & Kaiser, 2013 IES R324A090181 34





EMT: Fidelity Standards for Implementation

	Fidelity Standard	Performance
Therapist Parent Training		
Teaching the strategy	> .80	.91 (.06)
Modeling with child	> .80	.93 (.07)
Coaching the parent	> .80	.98 (.02)
Providing feedback	> .80	.88 (.13)
Parent EMT Implementation		
Matched turns	> .75	.78 (.12)
Responsiveness to child verbal turns	> .80	.92 (.05)
Talk at the child's level	> .50	.57 (.18)
Expansion of child utterances	> .40	.46 (.11)
Time delay strategies	> .80	.61 (.36)
Prompting strategies	> .80	.82 (.24)

- ### Teaching Parents to Implement EMT
- Build a relationship with the parent as a foundation for teaching and learning
 - TEACH** specific EMT skills
 - MODEL** the specific strategy
 - Parent practice with **COACHing**
 - REVIEW**: Reflect together and provide feedback on progress
 - [Example](#)
- Teach, Model, Coach, Review**
- Kaiser, A.P. & Roberts, M.Y. (2013). Parents as communication partners: An evidence based strategy for improving parent support for language and communication in everyday settings. *Exceptional in Language Learning and Education*, 20(3), 97-114.

Step 1: Build a Relationship

- Create positive expectations for child outcomes
 - Collaboratively set goals for parent and child
 - Discuss the positive outcomes of parent training
 - Discuss expectations about coaching and feedback
 - What type of feedback and coaching is most helpful to parents
- Develop a relationship as co-interventionists
 - Focus on child outcomes
 - Ask parents their opinions and preferences
 - View the parent as the expert on their child
 - Make plans for sessions together

Step 2: Teach a Strategy

- Workshops – 1 hour parent session that provides an overview of a strategy with the following the format:
 - Definition of the strategy
 - Rational 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
 - Reference the strategy to families' everyday interactions

Step 3: Model + Coaching

- Intervention sessions – 45-60 minute sessions at home or in clinic
 - Quick review of strategy and collaborative plan for the session (toys, activities and routines)
 - Therapist models the strategy and describes when she is doing the target strategy
 - Parent practices the strategy with the child and the therapist provides live coaching to 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.'")

Step 4: Feedback

- 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!"
 - Provides data and video based examples of progress

Teaching Language in Routines at Home

- Family daily routines:
 - Caregiving and family routines (bath, snack, meals)
 - Pre-academics (books, games)
 - Play (child preferred activities, outdoor play)
 - Community and Leisure activities
- Using family identified routines for talk and times when communication would make routines go more smoothly
- Routines were developed systematically from events identified by families
 - Predictable
 - Repetition
 - Opportunities for child initiated responses
 - Elaborated as child engagement and language increased

Our thinking about training parents at home is shaped by our collaboration with Juliann Woods and her Family Guided Routines Based Interventions.

Summary

- Teaching parents to implement EMT is an effective naturalistic teaching strategy
 - Designed for natural environments
 - Uses strategies similar to typical parent-child interactions
 - Teaches functional skills
- Fidelity of implementation (training parents) is essential for fidelity of parent-implemented intervention
- Effective use of parent-implemented EMT challenges SLPs to become effective parent trainers as well as effective clinicians with young children

[What Parents Say](#)

Key References

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Tina Stanton-Chapman

Social Competence in Peers (SCIP)

What is Peer-Related Social Competence?

- A child's ability to successfully engage in social interactions and relationships with peers (Odom, McConnell, & McEvoy, 1992)
 - What do children with good peer-related social competence look like?
- Outcome of successful social interactions is the development and maintenance of friendships

Who is At-Risk for Peer-Related Difficulties?

- **Children who:**
 - Were born prematurely and/or live in poverty
 - Have cognitive and/or communication delays
 - Experience abuse and/or neglect
 - Have a mother who is depressed, is a drug or alcohol abuser, is a victim of spousal/partner abuse, or has a cognitive disability

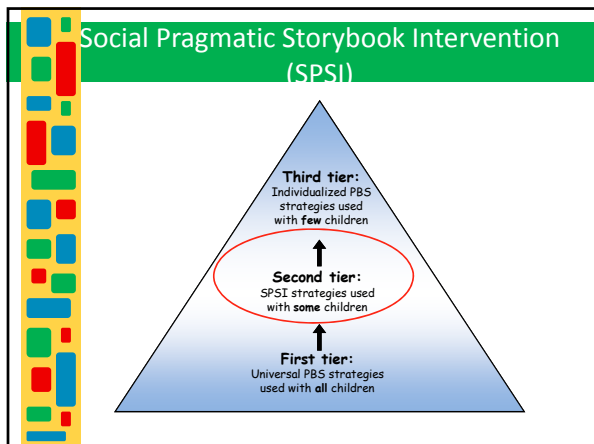


Consequences of Poor Peer Relationships



- Peer Rejection
- Not having close friends
- Play by themselves
- In later years, behavioral & mood disorders, delinquency, or substance abuse

SPSI Intervention Description:
A RESEARCH-BASED PEER INTERVENTION PROGRAM



- ### Key Social Interaction Skills
- **Skills for Play Entry**
 - Observing children at play & deciding how and when to join
 - **Skills for Maintaining Play & Forming Friendships**
 - Listening to & conversing with other children
 - Negotiating & resolving conflicts
 - Avoiding physical aggression
 - Regulating emotions
 - **Skills for Sharing & Cooperating**
 - Sharing toys
 - Helping other children
 - Taking turns in games, conversation, & play
 - Taking roles in dramatic play

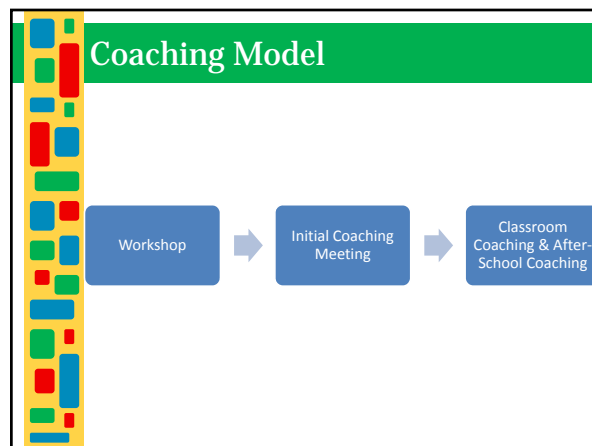
- ### Social Communication Strategies Introduced
- **Talk to your friend (verbally initiate)**
 - **Use your friend's name (appropriately obtaining one's attention)**
 - **Give & take turns (balance turn-taking)**
 - **Listen then talk (verbally responsive)**



Thematic Storybooks

- Pictures of two children interacting
- Exact materials & props to be used in play
- Specific models of vocabulary
- Icons that represent the social communication strategies
- Dialogical reading prompts for instruction on the strategies

• Dr. Thomas brings a sick dog into the examining room. He says, "Hi, Dr. Aaliyah." He uses Aaliyah's name to get her attention.



Workshop Learner Outcomes

- Define peer-related social competence and understand the consequences of poor peer relationships
- Learn how to identify target children who would benefit from the tier 2 SPSI intervention
- Learn how to implement storybook reading procedures
- Learn how to set up the SPSI center and support children's play using prompting strategies

SPSI Child Selection Form*

1. Why did you select this child to participate in the SPSI intervention? Please check all that apply:

- Child does not get along with other people ___
- Child has difficulty making and keeping friends ___
- Child has difficulty joining in with groups of children ___
- Child frequently plays by him or herself ___
- Child has difficulty taking turns, either in play or conversation ___
- Child has difficulty understanding what others are saying or feeling ___
- Child fails to look at peers or adults during conversations ___
- Child does not recognize body language or facial expressions ___
- Child does not recognize tone of voice ___
- Child ignores others when they talk to the child ___
- Child physically hurts others during play or when angry ___
- Child calls other children names ___

2. Demographic information on child:

Forms of Social Behavior

- What *form* is individually appropriate for the target child?
 - High Complex Form:
 - Conversing with a peer
 - Using reciprocal multiword phrases & accompanying gestures
 - Moderately Complex Form:
 - Using a single, 1-3 word phrase with a gesture
 - Simple Forms:
 - Vocalizing with a gesture
 - Using motor-gestural behaviors only

Instruction on Intervention Strategies



- Vocabulary instruction
- Reviewing of roles for each theme
- Reading of the thematic storybook
- Planning play
- Delivering mand & model prompts
- Video of Reading Story

Sample Prompts for Builder Theme

- Model Prompt Examples:
 - Say “Bring me a hammer.”
 - Say “Will you build a house with me?”
- Mand Prompt Examples:
 - “Ask him to hold the block while you hammer.”
 - “Add a block to her building.”
 - “Show her how to screw in the bolts.”
- Video Model Prompting: [video example](#)
- Video Mand Prompting: [video example](#)

Initial Coaching Meeting

- Coach & teacher decide on a social behavior that they would like to improve
- Learn intervention strategies
- Develop an Action Plan (ABC-PTR) with strategies to try
- Discuss videotaping



Selecting Play Partners

- Coach & teacher decide whether to select play partners who will always participate in the SPSI play center or whether to include *any* child who chooses to play in the center when the target child is playing
- Ideally, *at least 2* peer partners who are socially competent should be selected to play in the SPSI play center


ABC-PTR Problem-Solving Process

Antecedent	Behavior	Consequence
What happens immediately before the behavior? What are you doing? What are the children doing?	What are the problem behaviors being exhibited by the children? What are the children trying to communicate?	What do staff or peers do immediately after the behavior?
Prevent	Teach	Respond
What can I do to prevent the problem behavior from occurring?	What expected behavior or new skills can I teach?	What will I do if the problem or expected behavior occurs?

Coaching Model

- Classroom Coaching:
 - Videotape teachers as they practice target skills & strategies
 - Provide teachers with assistance as necessary

- After-School Coaching:
 - Asked teacher what well in using the target skills & strategies
 - Coach points out areas of strength using videoclips
 - Asked teacher to reflect on her use of the skill & peer interaction outcomes
 - Asked teacher what she would do differently
 - Engaged in joint action planning on the ABC-PTR Form



Tier 2 Initial ABC-PTR Action Plan

Antecedent	Behavior	Consequence
Children are playing in centers B (target child) is in playing in the house center with other children TA interacts with children while teacher tapes	B tells peers what to do, uses his body to corner children to make them comply, grabs toys or materials that he wants to play with from others	Children comply with B's directions or ignore him and walk away or leave the center
Prevent	Teach	Respond
Pair B with K (good peer model) in SPSI center play Seat B next to teacher during story reading Support B's play in the SPSI center (two times a week for 10 min. each) Provide support in other centers as needed	Observe children's play and use mand prompts to promote play between B and peers if they are not interacting Prompt B to use social-communicative skills (look at peer, take turns) from SPSI book	Praise B for appropriate play and use of social communicative skills Redirect and remind B of appropriate behavior (e.g., to take turns)

Tier 2 Follow-up ABC-PTR Action Plan

Antecedent	Behavior	Consequence
Children are playing in centers B (target child) is in playing in the house center with other children; TA interacts with children & teacher tapes	B tells peers what to do, uses his body to corner children to make them comply, grabs toys or materials that he wants to play with from others	Children comply with B's directions or ignore him and walk away or leave the center
Prevent	Teach	Respond
Continue use of initial plan strategies Identify other socially competent peer play partners who can be paired with B if K does not want to play in the SPSI center	Continue use of initial plan strategies If children are playing cooperatively, you just need to make comments to rf. their play (e.g., you are both hammering to build the house together). If they are not playing cooperatively, use short sentences to prompt cooperative play (e.g., Ask S for another block to put on top).	Continue use of initial plan strategies Increase use of descriptive praise to rf. cooperative play skills

Before and After Videos

Child Behaviors

	Behavior	Definition
Interactive Play	Parallel Play	target child plays independently with the same set of toys next to or close to a peer (i.e., target child is playing with blocks and peer is playing with a saw)
	Associative Play	target child plays with peer (and same set of toys) but there is no division of labor or assigned roles (i.e., sharing toys even if brief; children are talking to one another while they are working on the same activity)
	Cooperative Play	target child participates in organized play that has a purpose and the children have assigned roles (i.e., target child and peer are pretending to be doctors and are talking about what they are doing)

SPSI Coaching Process

Social Competence In Preschool
University of Virginia

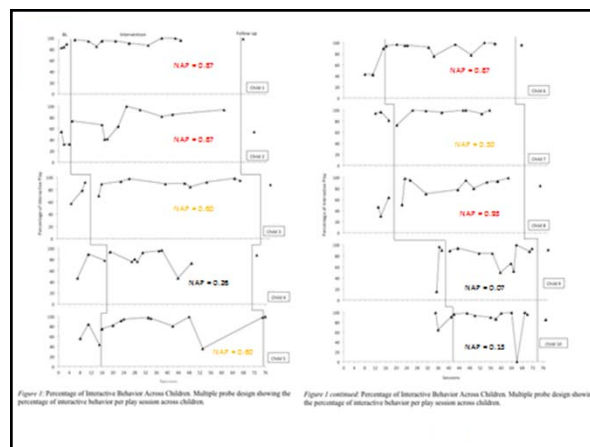
Coaching Process

Teacher ID #: _____ Coaching Cycle #: _____
 Coaching Target: _____ Date: _____

Before a coaching observation or meeting, I did the following:	Yes	No
1. Reviewed the teacher's current ABC-PTR form	<input type="checkbox"/>	<input type="checkbox"/>
2. Contacted teacher 48 hours before the scheduled date to remind her about the observation/meeting time, and the observation/coaching target area.	<input type="checkbox"/>	<input type="checkbox"/>
If "No," please indicate why: _____		
During the observation, I did the following:	Yes	No
2. Videotaped target classroom activities	<input type="checkbox"/>	<input type="checkbox"/>
If "No," please indicate why: _____		
During the meeting, I did the following:	Yes	No
1. Greeted teacher and asked if there were difficulties with last videotaping.	<input type="checkbox"/>	<input type="checkbox"/>

SPSI Social Validity

Item	Lead Teachers	Teaching Associates	Coach
Social skills and relationships improved for the target child as a result of the SPSI intervention			
The target child's play skills improved after the SPSI intervention.			
Staff would continue to use the SPSI materials and strategies in their classrooms beyond the current study.			



- ## Summary
- **Issues Specific to Working with Peers:**
 - Abilities of the peers
 - Toys and materials available for play
 - Teacher's ability to facilitate social communication breakdowns during interactions with peers
 - **Skills Best to Target in Peer Interventions:**
 - Initiating & responding to peers
 - Appropriately obtaining a peer's attention
 - Sharing & turn-taking

Key References

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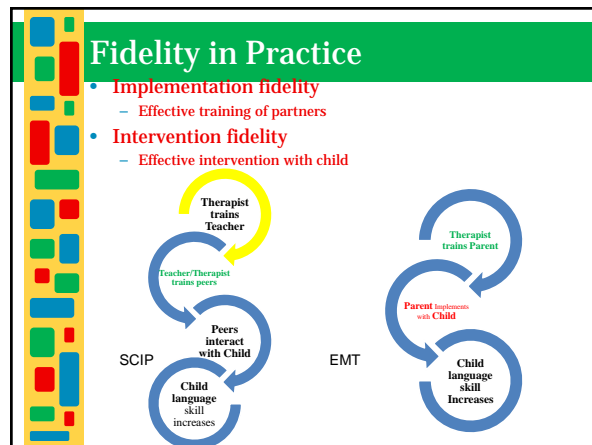
IMPLICATIONS FOR PRACTICING SLPS

Effective Naturalistic Teaching

- **Be fluent in implementing the intervention with children in the natural environment before you can teach partners**
 - EMT – meet fidelity standards with a range of children then meet fidelity standards for parent training
 - SCIP- meet fidelity standards with a range of teachers & children
- **Understand the communication demands and learning opportunities of natural setting in general and be able to analyze the specific setting**
 - Homes
 - Classrooms

Effective Naturalistic Teaching

- **Skills for teaching partners**
 - Relationship building
 - Teaching the intervention
 - Coaching, feedback, and trouble shooting
 - Integrating partner-implemented interventions with primary therapist implemented intervention
- **Skills for planning targets for specific children**
 - Functional communication assessment in context
 - Using other assessment information in context
- **Skills for evaluating child progress**
 - Data collection strategies
 - Using bench marks of typical communicators and context specific performance



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