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Communication Partner Instruction in AAC: What Works?

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Communication Carnival
Göteborg, Sweden

A photograph of two people sitting on a couch, one using a communication device. The slide is decorated with pencil graphics and a green date tag.

Disclosures & Acknowledgements

- Disclosures
 - I am being paid to serve as your speaker today.
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 - Kimberly Murza, & Melissa Malani
 - Extensive work on the meta-analysis this talk is based on
 - AAC lab students

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Overview

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    graph TD
      A[The Challenges of Partner Instruction] --> B[Partner Instruction Meta-Analysis: What does the research tell us?]
      B --> C[Implications for Clinical Practice]
      C --> D[The ImPAACT Program: An Example of Strategy Instruction]
  
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The Challenges of Partner Instruction

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The Challenges

We've all witnessed partners interacting with our clients in less-than-ideal ways

- Talking too much
- Asking too many questions
- Not providing enough 'wait time'

And we've all attempted to change these behaviors

- Offering suggestions
- Checking in to ask "How are things going?"
- Demonstrating other ways to interact with the client

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What Clinicians Typically Do

- Explain
- Tell
- Show

Operation of AAC technologies

- On/off, charging
- Layout of symbols
- Adding/ hiding/ deleting symbols

When AAC can & should be used

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Results of Common Approaches to Partner Instruction

Unchanged Interactions

Clinician Feels Frustrated

Partner Feels Inadequate

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Why Some Partner Instruction Approaches Don't Work

Changing human behavior is difficult!

- "Telling" is inherently different from "showing"
- Knowledge vs. skill
- "Showing" is inherently different from "doing"
- Need hands-on practice!

Partner techniques are not carefully selected

- What, **exactly**, do we want the partners to be doing?
- What evidence-based techniques can we use to teach them how to do these things?

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Common Problems

- We often:
 - Focus on what is 'wrong' with the partner instead of improving client behaviors
 - Try to change too many partner behaviors at once
 - Try to change too many client behaviors at once
 - Try to change client and/or partner behaviors in too many settings or situations at once
 - Fail to link changes in partner behaviors to identifiable, measurable changes in the client

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Show me the data!

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Purpose & Research Questions

Purpose

- Conduct systematic review and meta-analysis of AAC partner instruction literature

Research questions

- What are the effects of partner instruction interventions on the communication of individuals who use AAC?
- Do effects differ by variables relating to participants, interventions, or outcome characteristics?

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Why do this?

- Communication partners and people who use AAC influence each other when they communicate (e.g., Soto, 1999)
- Communication partners need to actively participate to achieve successful outcomes (Kent-Walsh & McNaughton, 2005)
- Growing body of communication partner literature in AAC
 - Summarizing the literature allows us to
 - See what works
 - See what does not work
 - Look for patterns across studies and labs

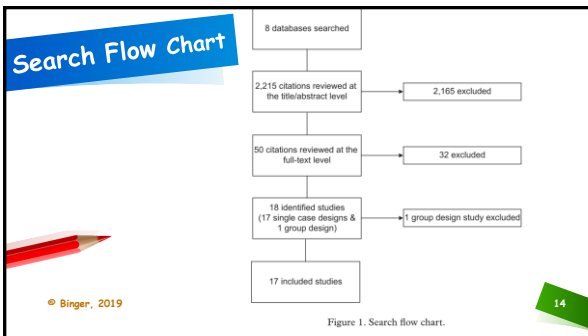
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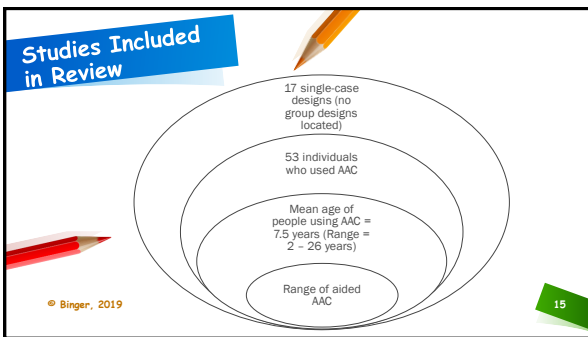
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Method

- Formal protocol developed to track all information
- Formal search conducted to locate all relevant research
- Strict criteria for inclusion & exclusion
 - No limits on ages of people who use AAC
 - Had to involve
 - Partner instruction
 - Intervention using AAC
 - Communication or language outcome
 - Experimental controls (no AB studies)
 - Published studies (not just conference presentations)

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Participants who used AAC

- Gender**
 - 72% male
 - 28% female
- AAC used**
 - Range of high & low tech
- Receptive language**
 - Range from disordered to within normal limits
- Primary diagnosis**
 - 32% autism
 - 32% intellectual disability
 - 17% cerebral palsy
 - 4% childhood apraxia of speech
 - 7.5% multiple disabilities
 - 7.5% other
- Age groups**
 - 28% preschool (<5 years old)
 - 66% elementary school (5-12 years old)
 - 2% adolescent (12-17 years old)
 - 4% adult (≥18 years old)

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Communication Partners

Role	Ages
<ul style="list-style-type: none"> Family/ caregivers Educational assistants Peers Teachers 	<ul style="list-style-type: none"> Ranged from 11-64 years old Age not reported in all studies

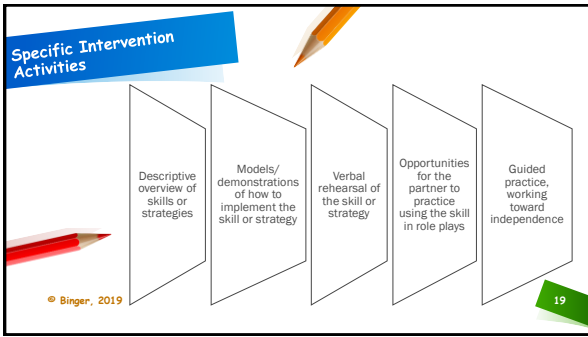
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Intervention Characteristics

- Grouped into two general categories

Strategy instruction	<ul style="list-style-type: none"> Partners taught to use a series of communication skills in a specified, multi-step, sequential manner; that is, a cueing hierarchy
Individual skill instruction	<ul style="list-style-type: none"> Taught to use specific skills individually, or Taught to use variety of skills within less structured sequence

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Outcomes Measured

- Pragmatics**
 - All studies included measures of pragmatics; e.g.,
 - Initiations (Dattilo & Light, 1993)
 - Frequency of communication acts/ turns (Trotter et al., 2011)
- Pragmatics + Semantics** (Kent-Walsh et al. studies)
 - Frequency of turns
 - Different semantic concepts
- Morpho-syntax** (Binger et al., 2008; 2010)
 - Multi-symbol messages

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Effect Sizes (Parker et al., 2009)

	# of Cases	Effect Size	Level of Effect
Overall	>50	.83	Very large
Strategy-based instruction	22	.90	Very large
Skill-based instruction	29	.72	Large
All 5 instructional components	19	.99	Very large
4 instructional components	9	.56	Moderate
3 instructional components	12	.80	Very large
2 instructional components	13	.83	Very large

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Additional Findings

- Type of AAC
 - Speech-generating device = very large effect
 - Other AAC = large effect
- Age
 - Very large for all ages except adolescents
 - Only one adolescent in one study
- Diagnoses
 - All very large effects except autism
 - Autism = moderate level (17 cases)

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Gaps in the Literature

- As with virtually all meta-analyses in our discipline (and most others) more research is needed
- This is especially true for



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What does it all mean?

Implications for Clinical Practice

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Central Findings

- Communication partner instruction works!
 - "Very large" effect size for the overall findings
- Partner instruction should be
 - Viewed as an integral part of AAC intervention
 - A routine part of intervention
 - Integrated into training programs
- Advocacy is needed
 - Issues with caseload sizes & reimbursement

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Range of Communication Partners

- Interventions effectively implemented by a range of partners
 - Caregivers/ parents
 - Educators and educational assistants
 - Peers
- Limitation of the study
 - Partner data often not reported in detail; therefore:
 - Could not include detailed analysis of the partners' learning

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Types of Instruction

- Best type of instruction for a range of communication goals is **strategy instruction**

Strategy instruction • Partners taught to use a series of communication skills in a specified, multi-step, sequential manner; usually includes a cueing hierarchy

	Effect size	Standard Deviation	Range	Description
Strategy instruction	.98	.06	0.80 - 1.0	Very large
Skill-based instruction	.72	.26	0.21 - 1.0	Large

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The ImPAACT Program:
An Example of Strategy Instruction

ImPAACT:
Improving Partner Applications of
Augmentative Communication Techniques

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Meet "Oscar"

- Age: 6;4
- Diagnosis: Developmental delay
- Language comprehension age equivalent score:
 - 3;6
- Intelligibility (i-ASCC; Dowden, 1997)
 - Without context: 30%
 - With context: 53%
- Seldom initiates speech
- Fairly new to using an AAC device
 - Not using the device much
 - No one but the speech therapist knows what to do with it

Goal:
Increase use of 2-word utterances

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Meet "Mrs. Horn"

- Educational Assistant in Oscar's classroom
- Lots of classroom experience
- Wants to help him but isn't sure how or when to encourage him to use his AAC device

Goal:
Help Oscar succeed in the classroom

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ImPAACT Program: Overview

Steps of Partner Instruction

- Select skills to teach & initial contexts for communication
- Pre-test and commitment to completing instructional program
- Strategy description
- Strategy demonstration
- Verbal practice of strategy steps
- Controlled practice and feedback
- Advanced practice and feedback
- Post-test and commitment to long-term strategy use
- Generalization of targeted strategy use

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Step 0: Guidelines for Selecting Partner Skills

Step 0

Partner Skill Selection

- Defined explicitly
- Eliminate the least helpful partner behaviors
- Acquired rapidly by partner
- Change client outcomes quickly
- Are easily identifiable and measurable
- Used initially within 1-2 highly specific contexts

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Skills We Teach Partners

Step 0

Evidence-Based Skills We Teach Partners

Aided Modeling	• To provide functional models of effective AAC use
Expectant Delay	• To provide communication opportunities, additional processing time, and an expectation for communication
WH- Question Asking	• To prompt higher-level content
Verbal Prompts	• To provide client with direct indication of what to do
Increased Responsivity	• To reinforce communicative attempts and expand utterances

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Why Teach These Skills as a Strategy?

Step 0

This is how it feels when we teach skills individually

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Strategy 1: "RAA RAA RAA"

Step 0

Skills embedded in this strategy:

- Aided model
- Expectant delay
- WH questions
- Responsivity

Interaction Strategy for Teaching Communicative Turntaking

On each double-page spread in each book read, you will **RAA** as follows:

"Elicitation" Component	"Response" Component
READ + MODEL using AAC system *Pause*	RESPOND to all communicative turns taken by (your student) at any time.
ASK + MODEL using AAC system *Pause*	
ANSWER + MODEL using AAC system RAA, RAA, RAA!	

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Strategy 2: RAAP RAAP RAAP!

Step 0

Skills embedded in this strategy:

- Aided model
- Expectant delay
- WH questions
- Verbal prompt
- Responsivity

Interaction Strategy for Teaching Multi-Symbol Messages

Until the student uses 2 symbols, you will **RAAP** on each double-page spread of the book:

"Elicitation" Component	"Response" Component
READ + MODEL 2 SYMBOLS using AAC system *Pause*	RESPOND by using 2 or more symbols
ASK + MODEL 2 SYMBOLS using AAC system *Pause*	
ANSWER + MODEL 2 SYMBOLS using AAC system *Pause*	
PROMPT using AAC system "Show me that!" *Pause*	
RAAP, RAAP, RAAP!	

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Communication Contexts: Start Small, Then Expand

Step 0

Identify 1-2 specific contexts to begin

Activity should last no longer than 10-15 minutes

It's much easier for the partner if he or she knows when to use the skill

Begin with highly specific contexts

We know you want to change so much more!
• Trying to change too much at once is counterproductive

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Step 1: Pre-Test & Commitment

Step 1

- Provide illustrations "with" and "without" use of targeted strategy/skills
 - Show pre- and post-videos or
 - Alternatively: Simply demonstrate with the child

Spend ~ 5 minutes showing what it looks like to NOT use the strategy/techniques

- Interact with the child in ways that are typical for participating communication partners

Then spend ~ 5 minutes showing what it looks like to USE the strategy/techniques

- Obtain formal commitment to completing instructional program

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Step 2: Strategy Description

Step 2

- Provide a visual aid/handout to the partner
- Describe each component of strategy or technique

Interactions Strategy
for
Teaching Multi-Step Messages

Use the number one (1) symbol, use the BALE to mark each step instead of the book.

"Initiator" Component	"Response" Component
1. READ: MODEL 1 SYMBOLS with AAC device	
2. MODEL: MODEL 2 SYMBOLS with AAC device	
3. PRACTICE: MODEL 2 SYMBOLS with AAC device	When the number one (1) or two (2) is present
4. ASSESS: MODEL 2 SYMBOLS with AAC device	RESPOND by using 2 or more symbols
5. REPEAT: using AAC device	

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Step 3: Strategy Demonstration

- ROLE PLAY Demonstrations**
 - Core part of a strategy instruction
 - The 'practice' components that builds **skills**, not just knowledge

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Example Communication Display for Oscar

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Step 4: Verbal Practice of Strategy Steps

- Verbal Practice of Strategy Steps
 - Helps partner to:
 - Memorize the strategy
 - Depend less on the handout
 - Integrate the new information

- "Let's practice saying the steps involved in the strategy:
 - Read
 - Ask
 - Answer
 - Prompt
 - And always respond with two symbols
- "Let's say it together five times"
- "Now you say the steps five times"
- "Now I'll say them again five times"
- "Now you say them again five times"

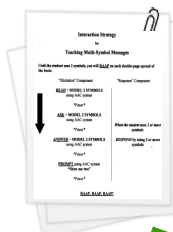
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**Step 5:
Controlled Practice & Feedback**

Step 5

- **ADDITIONAL ROLE PLAYS**
 - Communication partner practices
 - Uses the printed strategy as needed
 - Clinician pretends to be the child
 - Clinician provides feedback and guidance as needed
 - “Errorless learning” approach; **don’t let the partner make mistakes**

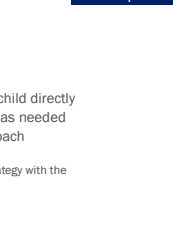


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**Step 6:
Advanced Practice & Feedback**

Step 6

- **LIVE INTERACTION WITH CLIENT**
 - Partner takes the lead and works with child directly
 - Clinician is present; provides feedback as needed
 - Continue with ‘errorless learning’ approach
 - Clinician helps as needed
 - Fade feedback as partner masters the strategy with the child

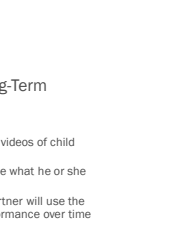


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**Step 7:
Post-Test & Long-Term Commitment**

Step 7

- Post-Test and Commitment to Long-Term Strategy Use
 - **VIDEO REVIEW AND DISCUSSION**
 - Show and discuss “before” and “after” videos of child with whom you’ve worked
 - Obtain feedback from the partner to see what he or she liked and suggestions for improvement
 - Generate an ‘action plan’ to ensure partner will use the new skills to maintain the client’s performance over time



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Step 8: Generalization of Strategy Use

- **EXPANDED PRACTICE**
 - Practice using strategy/skill across a wide range of settings
 - Will very likely need new vocabulary/communication displays
 - Need a plan to ensure these are updated continually

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Outcomes for Oscar and Mrs. Horn

- Mrs. Horn
 - Readily learned how to consistently use the "RAAP Strategy" with storybooks
 - Less than 2 hours of instruction
 - Feedback to the researcher
 - "Every teacher should receive this training!"
- Oscar
 - Immediately began creating 2- and 3-word utterances on his AAC device when reading stories with Mrs. Horn
 - AAC device seemed to help with his spoken language too
 - Often said each word as he selected each symbol

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Summary

Partner Instruction					
Works when implemented using evidence-based approaches	Is rewarding for clients and partners	Needs to be intentional	Requires dedicated time for hands-on, supported practice	Should be taught within a strategy approach, not just single skills	Should initially focus on highly defined activities within limited time frames

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Selected References

All articles available on www.creanet.org/na

- **General overview of cognitive strategy instruction**
 - Kent-Walsh, J., & McNaughton, D. (2008). Communication partner instruction in AAC: Present practices and future directions. *Augmentative and Alternative Communication, 21*, 199-204.
- **Good overview of ImPAACT**
 - Kent-Walsh, J., Binger, C., & Malen, M. (2010, invited). Teaching partners to support the communication skills of young children who use AAC: Lessons from the ImPAACT Program. *Early Childhood Services, 4* (3), 159-170.
 - Kent-Walsh, J. & Binger, C. (2013). Fundamentals of the ImPAACT program. *Perspectives on Augmentative and Alternative Communication, 22*, 51-61.
- **Selecting skills to teach communication partners**
 - Binger, C. & Kent-Walsh, J. (2012, invited). Selecting skills to teach communication partners: Where do I start? *Perspectives on Augmentative and Alternative Communication, 21*, 126-134.
- **Evidence for ImPAACT program**
 - Binger, C., Kent-Walsh, J., Berens, J., Del Campo, S., & Rivera, D. (2008). Teaching Latino parents to support the multi-symbol message production of their children who require AAC. *Augmentative and Alternative Communication, 24*(32-33-35).
 - Binger, C., Kent-Walsh, J., Cwing, C., & Taylor, S. (2010). Teaching educational assistants to facilitate the multi-symbol message production of young students who require AAC. *American Journal of Speech-Language Pathology, 19*, 108-120.
 - Kent-Walsh, J., Binger, C., & Hasham, Z. (2010). Effects of parent instruction on the symbolic communication of children using AAC during storybook reading. *American Journal of Speech-Language Pathology, 19*, 97-107.
 - Timpke, E. et al. (2010). Effects of Parent Instruction on the Communicative Turns of Preschoolers With Down Syndrome Using AAC. *ASHA Convention*.

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