


**Autism and the Young Child:  
Language Development,  
Assessment, and  
Intervention**

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### OVERVIEW




- Speech and Language Development
- Communication Characteristics of Autism
- Joint Attention and Play
- Social Language and Pragmatics
- Assessment
- Interventions

### SPEECH DEVELOPMENT

- Articulation
- Fluency (developmental disfluencies)
- Voice Quality
  - Prosody
  - Rate
  - Intonation

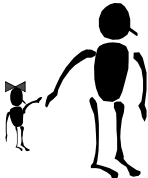
### LANGUAGE DEVELOPMENT

<p>Birth - 3 Months</p> <ul style="list-style-type: none"> <li>□ Smiles when spoken to</li> <li>□ Recognizes the voice of caregiver</li> <li>□ Makes pleasure sounds (cooing)</li> </ul>	<p>4-6 Months</p> <ul style="list-style-type: none"> <li>□ Responds to changes in tone of voice</li> <li>□ Attends to music</li> <li>□ Babbles</li> <li>□ Vocalized excitement &amp; displeasure</li> </ul>
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### LANGUAGE DEVELOPMENT

<p>7-12 Months</p> <ul style="list-style-type: none"> <li>□ Plays games like peek-a-boo</li> <li>□ Recognizes common words</li> <li>□ Responds to requests (come here)</li> <li>□ Imitates speech sounds</li> <li>□ Uses 1-2 word phrases</li> </ul>	<p>1-2 Years</p> <ul style="list-style-type: none"> <li>□ Points to body parts</li> <li>□ Follows commands</li> <li>□ Uses about 50 words</li> <li>□ Combines 2 words</li> </ul>
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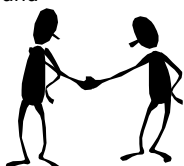
### LANGUAGE DEVELOPMENT

<p>3-4 Years</p> <ul style="list-style-type: none"> <li>□ Understands simple "WH" questions</li> <li>□ Talks about recent activities</li> <li>□ 4+word sentences</li> <li>□ Speech clarity is good</li> </ul>	<p>4-5 Years</p> <ul style="list-style-type: none"> <li>□ Listens to short story &amp; answers questions</li> <li>□ Hears &amp; understands most of what is heard</li> <li>□ Stays on topic</li> <li>□ Easily communicates</li> <li>□ Uses sentences with a great deal of detail</li> </ul>
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## PRAGMATICS - SOCIAL LANGUAGE

- **Using language** for different purposes
- **Changing language** according to the needs of a listener or situation
- **Following rules** for conversations and storytelling



ASHA, 2007

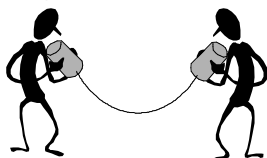
## PRAGMATICS - SOCIAL LANGUAGE

- **Using language** for different purposes, such as
  - greeting (e.g., hello, goodbye)
  - informing (e.g., I'm going to get a cookie)
  - demanding (e.g., Give me a cookie)
  - promising (e.g., I'm going to get you a cookie)
  - requesting (e.g., I would like a cookie, please)



## PRAGMATICS - SOCIAL LANGUAGE

- **Changing language** according to the needs of a listener or situation, such as
  - talking differently to a baby than to an adult
  - giving background information to an unfamiliar listener
  - speaking differently in a classroom than on a playground



## PRAGMATICS - SOCIAL LANGUAGE

- **Following rules** for conversations and storytelling, such as
  - taking turns in conversation
  - introducing topics of conversation
  - staying on topic
  - rephrasing when misunderstood
  - how to use verbal and nonverbal signals
  - how close to stand to someone when speaking
  - how to use facial expressions and eye contact



## COMMUNICATION

- DSM-IV-TR - social, communication, behavior
  - Nonverbal, poor peer relations
  - Delay or no spoken language
  - No initiation or continuing of conversation
  - Adhere to ritual and routine
  - Focus on parts of objects


*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision DSM-IV-TR*  
American Psychiatric Association, 2000

## COMMUNICATION

- IDEA
  - 300.8(c)(1)
    - i Autism means a **developmental disability** significantly affecting **verbal and non-verbal communication and social interactions**, generally evident before age three, that **adversely affects** a child's **educational performance**. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in routine, and unusual responses to sensory experiences.
    - ii The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance, as defined in paragraph (c) (4) of this section.
    - iii A child who manifests the characteristics of autism after age three could be diagnosed as having autism if the criteria in paragraph (c) (1) of this section are satisfied.

### COMMUNICATION & AUTISM


- Changes happen early
  - Social smile (reciprocity)
  - Verbal and nonverbal turn taking
  - Orienting to own name
  - Pointing
  - Showing objects
  - Looking at others



### COMMUNICATION & AUTISM

- What should we pay attention to??
  - Social orientation
  - Joint attention
  - Imitation
  - Play
  - Reciprocal affective behavior


Osterling & Dawson (2005)



### COMMUNICATION & AUTISM

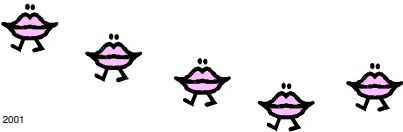
- Range of development
  - Nonverbal to functional but idiosyncratic speech.
  - 1/3 to 1/2 have no functional communication.
  - Most notable disorder whether verbal or non-verbal is - SOCIAL.
  - Children with ASD are generally considered to have the social maturity of someone 1/3 to 2/3 of their age.

Lord & Paul, 1997, Bryson 1996, Wetherby, Schuler, & Prizant 1997



### COMMUNICATION & AUTISM


- How does ASD change communication development?
  - Underlying social-cognitive prerequisites may be the same for children with autism and those with typical development



Stone & Yoder, 2001


### COMMUNICATION & AUTISM

- Gestures
- Echolalia
- Play
- Communicative function of negative behaviors
- Joint attention



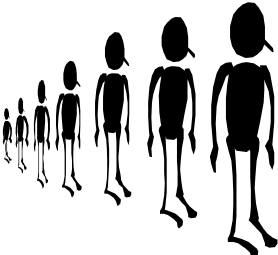
### COMMUNICATION & AUTISM

- Gestures
  - May not be present
  - May not be functional
  - Can the child imitate gestures?
  - Are we all "seeing" the same gesture?



## COMMUNICATION & AUTISM

- Echolalia - repetition (echoing) of verbal utterances
  - Immediate
  - Delayed



## COMMUNICATION & AUTISM

### IMMEDIATE ECHOLALIA

Interactive

Turn taking	Utterances used as turn fillers in an alternating verbal exchange
Declarative	Utterances labeling objects, actions, or location (accompanied by demonstrative gestures)
Yes answer	Utterances used to indicate affirmation of a prior utterance
Request	Utterances used to request objects or others' actions. Usually involves mitigated echolalia

Prizant & Duchan, 1981

## COMMUNICATION & AUTISM

### IMMEDIATE ECHOLALIA

Noninteractive

Nonfocused	Utterances produced with no apparent intent and often in states of high arousal (e.g., fear, pain)
Rehearsal	Utterances used as a processing aid, followed by utterance or action indicating comprehension of echoed utterance
Self-regulatory	Utterances which serve to regulate one's own actions. Produced in synchrony with motor activity

## COMMUNICATION & AUTISM

### DELAYED ECHOLALIA

Interactive

Turn Taking	Utterances used as turn fillers in alternating verbal exchange
Verbal completion	Utterances which complete familiar verbal routines initiated by others
Providing information	Utterances offering new information not apparent from the situational context (may be initiated or respondent)
Labeling (interactive)	Utterances labeling objects or actions in the environment
Protest	Utterances protesting actions of others. May be used to prohibit others' actions

Prizant, 1983

## COMMUNICATION & AUTISM

### DELAYED ECHOLALIA

Interactive

Request	Utterances used to request objects
Calling	Utterances used to call attention to oneself or to establish/maintain interaction
Affirmation	Utterances used to indicate affirmation of previous utterance
Directive	Utterances (often imperatives) used to direct others' actions

Prizant, 1983

## COMMUNICATION & AUTISM


### DELAYED ECHOLALIA

Noninteractive

Nonfocused	Utterances with no apparent communicative intent or relevance to the situational context, may be self-stimulatory
Situation association	Utterances with no apparent communicative intent which appear triggered by an object, person, situation, or activity
Self-directive	Utterances which serve to regulate one's own actions. Produced in synchrony with motor activity
Rehearsal	Utterances produced with low volume followed by a louder interactive production. Appears to practice for subsequent production
Label (noninteractive)	Utterance labeling objects or actions in the environment with no apparent communicative intent. May be a form of practice for learning language

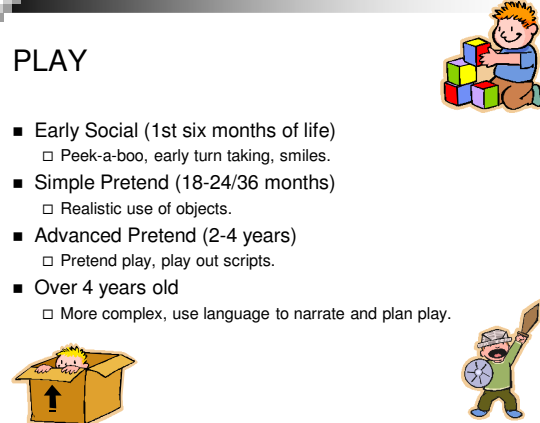
## COMMUNICATION & AUTISM

- Play
  - Absence of play skills
  - Play does not vary
  - Lack of spontaneous play
  - No social or "make believe" play
  - Elaborate or intricate building
  - THINK ABOUT THE SKILLS YOU NEED TO PLAY...




## PLAY

- Early Social (1st six months of life)
  - Peek-a-boo, early turn taking, smiles.
- Simple Pretend (18-24/36 months)
  - Realistic use of objects.
- Advanced Pretend (2-4 years)
  - Pretend play, play out scripts.
- Over 4 years old
  - More complex, use language to narrate and plan play.



## PLAY

- Characteristics
  - Pleasurable
  - Requires active engagement
  - Voluntary and intrinsically motivated
  - Flexible and changing
  - Non-literal orientation



## COMMUNICATION & AUTISM


- Communicative function of negative behaviors
  - Rely on immature or idiosyncratic methods for self regulation
  - Chewing
  - Carrying objects
  - Rocking
  - Vocal play
  - Aggression
  - Tantrums
  - Bolting

ARE WE LISTENING???

TRYING TO TELL US???

## JOINT ATTENTION

- Lack development in joint attention
- ASD, language, or mental retardation
- Fundamental or core deficit
- Better indicator than language scores, IQ, mental or chronological age...




## JOINT ATTENTION

- What is joint attention??
  - Orienting to social stimuli focusing on the eyes, direction of gaze, facial expressions, gestures, intonation, and gestures of another person.
- Why is this important?
  - Allows us to recognize another's visual line of regard, directing another's attention to objects or events of interest, and determining another's intentions.

ASHA, 2006



## JOINT ATTENTION

- Poor development of joint attention leads to...
  - Deficits in play
  - Decreased emotional responsiveness
  - Poor peer interactions
  - Barrier to language development



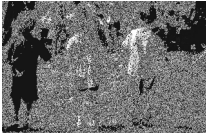
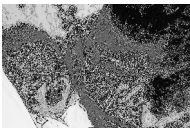
## JOINT ATTENTION

- How joint attention develops:
  - Orienting and attending to social partner
  - Coordinated attention between people and objects
  - Sharing affect or emotional states
  - Draw others' attention to objects or events to share the experience

## JOINT ATTENTION & AUTISM


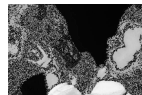
- Display less eye gaze directed to people
- Less positive affect with unfamiliar adults
- Less affect with eye gaze with mother

- Less response when smiled at by mothers
- Fail to orient to social & nonsocial stimuli
- Root of language difficulties

## ATTENTION

- A child has joint attention when they are able to:
  - Orient to social stimuli
  - Coordinate eye gaze between an object and caregiver
  - Display positive and negative affect directed to caregiver
  - Read and interpret the affective expressions of the caregiver



## WHY IS THIS IMPORTANT?

“Successful participation in social interaction is the hallmark of our species. Performing adequately in social situations defines our competence as individuals and establishes the necessary social history for future interactions... a lack of social competence is marked by behavior that fails to produce, maintain, or enhance positive interactions with others or by a complete absence of behavior in contexts in which it is required.”

Odom & McConnell, 1992


## SOCIAL LANGUAGE & PRAGMATICS

- Poor joint attention = poor play
- Play skills will echo core characteristics of autism


## SOCIAL SKILLS

- Language Use
- What makes us human
- Takes context into account
- Knowing how to use your language to get what you want or need



## SOCIAL SKILLS

- Possess a skill
- Possess and know when to use a skill
- Possess, knows when to use and uses a skill




## SOCIAL SKILLS

Playing	Asking for help	Eye contact	Facial expression-personal	Asking questions	Answering questions
Using Names	Timing	On task	Facial expression-interpreting	Voice Volume	Tone of voice
Greeting	Waiting	Listening	Joining in	Expressing feelings	Being fair
Closing	Compromise	Starting a conversation	Ending a conversation	Turn taking - social play	Sharing
Introducing Self	On topic	Verbal turn taking	Giving compliments	No	Humor

## SOCIAL SKILLS

- Academic knowledge ≠ Social Knowledge
- Knowing a skills ≠ Skill Competence
- Use of a skill 1:1 ≠ Generalization



## ASSESSMENT

- More than just language
  - Must be very comprehensive...

Think about...

**Presody**      **Play**      **Sensory**

**Oral Motor**      **ABC**      **Feeding**

## ASSESSMENT

MEASURE	AGES	FORMAT	ITEM/SUBDOMAIN	LEVEL OF EXPERTISE	TIME	PURPOSE
Asperger Syndrome Diagnostic Scale (ADOS) (Myles, et al., 2001)	5-18 yrs	Parent/teacher/clinician Questionnaire	50 items - Cognitive - Maladaptive - Language - Social - Sensorimotor	Minimal	10-15 min	Screening
Australian Scale for Asperger Syndrome (ASAS) (Carnett & Attwood, 1995; Attwood & Barnett, 1998)	Primary school age 3-19 yrs	Parent Questionnaire	24 items for 3 subdomains and 5 items for 1 subdomain - Social and emotional abilities - Communication skills - Cognitive skills - Movement skills - Other characteristics	Minimal	15-20 min	Screening
Autism Behavior Checklist (ABC) (Krug et al., 1978; Krug, Arick, Almond, 1980)	18 mos and older	Behavioral Checklist Clinician interview with anyone who knows the individual well	57 items 4 <sup>th</sup> Subtest of the ASIEP. Behavior rating by parent or teacher - sensory behavior - social relating - repetitive behaviors - language and communication skills - social and adaptive skills	Minimal	10-20 min	Screening

Lee, 2006

### ASSESSMENT

MEASURE	AGES	FORMAT	ITEMS/SUBDOMAIN	LEVEL OF EXPERTISE	TIME	PURPOSE
<b>Childhood Autism Rating Scale (CARS)</b> (Schopler & Reichler, 1971; Schopler, Reichler, DeVellis, & Daly, 1980; Schopler, Reichler, & Renner, 1988)	2 through adult	Behavioral Checklist	15 items (four point scale) - Rating to people; imitative behavior; Emotional response; Body use; Object use; Adaptation to change; Visual response; Listening response; Perceptive response; Fear and anxiety; Verbal communication; Non-verbal communication; Activity level; Level and consistency of intellectual relations; General impressions	Minimal	5-10 min.	Screening
<b>Gilliam Autism Rating Scale (GARS)</b> (Gilliam, 1995)  Gilliam Autism Rating Scale-Second Edition (GARS-2) (Gilliam, 2005)	3-22 years	Behavioral Checklist	56 items (four-point scale) - Stereotyped behaviors - Communication - Social Interaction - Developmental Disturbances  GARS-2 42 items. Three subscales - Stereotyped behaviors - Communication - Social Interaction	Minimal	5-10 min.	Screening
<b>Checklist for Autism in Toddlers (CHAT)</b> (Baron-Cohen, Allen, & Gillberg, 1992)	18 mos.	Interview and interactive observation	Total 14 items 9 items-questions asked to the parents - key items: Pretend play, protodeclarative pointing - non-key items: rough and tumble play, social interest, motor development, social play, pretemporale pointing, functional play, showing 5 items-observations made by the primary health care worker - key items: following a point, pretending, producing a point - non-key items: eye contact, tower of bricks	Minimal	5-10 min.	Screening

### ASSESSMENT


MEASURE	AGES	FORMAT	ITEMS/SUBDOMAIN	LEVEL OF EXPERTISE	TIME	PURPOSE
<b>Asperger Syndrome (and high-functioning autism) Diagnostic Interview (ASDI)</b> (Gillberg et al., 2001)	6-55 years	Investigator-based interview	20 items for 6 areas (0=does not apply, 1=applies to some degree or very much) - Area 1: severe impairments in reciprocal social interaction (extreme egocentricity) - Area 2: all absorbing narrow interest patterns - Area 3: imposition of routines, rituals and interests - Area 4: speech and language peculiarities - Area 5: non-verbal communication problems - Area 6: motor clumsiness	Minimal	20 min	Diagnosis (preliminary diagnostic decisions)
<b>Autism Diagnostic Interview - Revised (ADI-R)</b> Lord, Schopler, Rutter, & Polite, 1995; Lord, Rutter, & LeCouteur, 1994; Rutter, LeCouteur, & Lord, 2003	Over 2 yrs (MA)	Interview	93 items - Early development - Language and communications - Reciprocal social interactions - Restricted, repetitive, and stereotyped behaviors and interests	Requires Training	1.5-2.5 hrs	Diagnosis
<b>Autism Diagnostic Observation Schedule (ADOS)</b> (Lord et al., 2000; Lord, Rutter, DiLavore, & Risi, 2001)	Toddlers to Adults (over 2 yrs)	Semi-structured interview (Clinician administered interactive play based assessment)	Total 14 items 9 items-questions asked to the parents - key items: Pretend play, protodeclarative pointing, social interest, motor development, social play, pretemporale pointing, functional play, showing 5 items-observations made by the primary health care worker - key items: following a point, pretending, producing a point - non-key items: eye contact, tower of bricks	Requires Training	30-40 min	Diagnosis

### ASSESSMENT

- **Expressive One-Word Picture Vocabulary Test** - to assess vocabulary. Ages 2-18.11 years.
- **The Language Processing Test 3** - to measure areas of associations, categorizations, similarities, differences, multiple meanings, and attributes. Ages 5-11 years.
- **Test of Word Knowledge** - to measure skills in synonyms, figurative usage, word definitions, multiple contexts, expressive/receptive vocabulary, and word opposites. Ages 5-17 years.
- **Test of Problem Solving 3** - making inferences, sequencing, negative questions, problem solving, predicting, determining causes. Ages 6-12 years.
- **Pragmatic Language Skills Inventory** - 45 question rating scale to assess personal, social, and classroom interactions skills. Ages 5-12.11 years.


### INTERVENTIONS

- Intervention **EARLY**
- Philosophy isn't as important as ...
- Certain "must haves"



### INTERVENTIONS


- Early Intervention
  - "Based on the available outcome research, many children who receive early intervention make substantial developmental gains and are able to be included in a general education classroom by the time they enter elementary school."



Dawson & Osterling, 1997


### PROGRAM CHARACTERISTICS

- Structured
  - TEACCH (Treatment and Education of Autistic and related Communication-handicapped CHildren)
- Behavioral
  - Intensive 1 to 1 (Behavioral, Discrete Trial)
  - Incidental Teaching
- Naturalistic
  - Developmental Sequencing
  - Inclusion (integrated preschool)



## INTERVENTIONS

- Must Haves
  - Address skill domains.
  - Very supportive teaching environment.
  - Generalizations strategies.
  - Predictable Routines.
  - Functional approach to behavioral concerns.
  - Transition plan.
  - Family involvement.






Dawson & Osterling, 1997

## INTERVENTIONS

- Transition Survival Skills
  - Complying with adult requests
  - Taking turns
  - Listening to directions (near and far)
  - Raising hand
  - Commenting
  - Toileting






## INTERVENTIONS

- Follow the child's lead
- Strategies for self regulation
- Establish a loving/trusting relationship
- Social play versus ritualized games
- Communication intent

## INTERVENTIONS


- Structure and Visual Supports
  - Video
  - Photos
  - Cartooning
  - Structured Teaching
  - Priming
  - Modeling
  - Virtual Worlds
  - Schedules


## INTERVENTIONS


- Schedules


**FIRST**





**THEN**





speech therapy 

sit on a chair 

share 

relax 

group play 

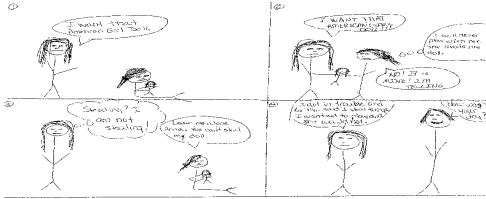
goodbye 

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## INTERVENTIONS

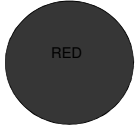
### Cartooning






## VISUAL SUPPORTS

### Structured Teaching

(place objects here)



## INTERVENTIONS

- Other supports
  - Social Stories™ (Carol Gray)
  - Power Cards (Elisa Gagnon)
  - Incredible 5 Point Scale (Kari Dunn Buron)
  - Timers
  - Charts
  - Checklists

## INTERVENTIONS

- Other supports
  - Social Stories™ (Carol Gray, 2000)
 

**I am at school and it is Circle Time. The teacher will like it if I listen to her. I will try to sit, listen, and pay attention to the teacher. If I need to leave the circle I may sit in my beanbag chair or sit on my big pillow. These are good choices. My teacher or my aide will help me stay in circle or sit on my beanbag or pillow.**

## INTERVENTIONS

- Power Cards (Elisa Gagnon, 2001)
 

Monkey wants everyone to know that it is very important to be able to handle anger appropriately. Monkey started working on controlling his temper when he was a very small chimp and he has advice for all little boys who feel angry.

The next time you feel angry, try doing these things that helped Monkey:


  - 1. Ask an adult if you can go to a quiet spot and calm down for a few minutes.
  - 2. Get a piece of paper and pencil and draw for a few minutes to calm down.
  - 3. Talk to an adult, like mom or Ms. Lynn, and work on a solution.

Practice these things and you'll be swinging just like Monkey.

## INTERVENTIONS

### Power Cards

1. Ask an adult if you can go to a quiet spot and calm down for a few minutes.
2. Get a piece of paper and pencil and draw for a few minutes to calm down
3. Talk to an adult, like mom or Ms. Lynn, and work on a solution.






## VISUAL SUPPORTS



- Incredible 5 Point Scale (Kari Dunn Buron, 2003)

<b>5</b>	Screaming, out of control		<b>5</b>	
<b>4</b>	Yelling, outside voice		<b>4</b>	
<b>3</b>	Normal voice, just talking		<b>3</b>	
<b>2</b>	Whisper, soft voice		<b>2</b>	
<b>1</b>	No talking		<b>1</b>	






## VISUAL SUPPORTS

- Timers
  - 
  - 
  - 






## VISUAL SUPPORTS

COMPLETE	ACTIVITY
<input type="checkbox"/>	Go to bathroom.
<input type="checkbox"/>	Brush teeth.
<input type="checkbox"/>	Get dressed.
<input type="checkbox"/>	Eat breakfast.
<input type="checkbox"/>	Get backpack.
<input type="checkbox"/>	Get lunch bag.
<input type="checkbox"/>	Get in van.
	I followed my schedule.
	I followed my schedule by myself (no reminders)

## INTERVENTIONS

- AAC
  - Aided
    - Picture Boards 
    - PECS 
    - Objects Boards 
    - Voice Output Devices 
  - Unaided
    - Sign language 

## SOCIAL SKILLS

- Social Skills Curricula
  - 
  - 
  - 
  - 
  - 

## SUMMARY

- Know developmental milestones!!
- Joint attention and play are VERY important!!!!
- All things are not created equal.
  - Academic knowledge ≠ Social Knowledge
  - Knowing a skills ≠ Skill Competence
  - Use of a skill 1:1 ≠ Generalization
- Intervention
  - Early, structured, intense & comprehensive!

## SUMMARY

- Communication method
  - AAC (unaided or aided)
- Social Skills
  - Modeling, discussion, roll play, expansion, and generalization



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