The Importance of Teaching Imitation as Part of an Early Intervention Program

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Objectives

Define
Define Imitation

Identify
Identify why imitation is an important skill

Identify
Identify strategies for teaching imitation to young learners
Imitation Development

“Lower-level” copying behaviors
- Mimicry
- Emulation

“True imitation”
“The precise replication of the form of an action without an understanding of the goal... an automatic behavior that occurs rapidly and outside of awareness”

(Sevlever & Gillis, 2010)
Emulation

Eliminating some of the action steps, or copying only the goal but not some of the modeled actions to reach the goal (Oturai, Kolling, & Knopf, 2018; Vivanti, Trembath, & Dissanayake, 2014)

Skill develops around the age of one (Oturai, Kolling, & Knopf, 2018)
True Imitation

“A process by which organisms reproduce both the form and the intention of a modeled action, or as a combination of the processes that underlie mimicry and emulation” (Sevlever & Gillis, 2010)

Skill develops between the ages of one and two (Oturai, Kolling, & Knopf, 2018)
Types of Imitation

**Motor Imitation**
- Actions with objects
- Motor movements

**Vocal**
- Sounds
- Words
Defining Imitation

- The ability to intentionally copy the actions of others
- Replication of actions of others immediately after observing a model
- Replication of actions spontaneously later on in a different setting
Why Does Imitation Matter?

Primary mode of social interaction for infants
• Reciprocal interactions between infant and caregiver communicates interest & engagement

Initial way in which toddlers begin to interact with same-aged peers

Speculated to be a “starter-set skill”
• Allows for social and communicative interactions to occur, within which language can develop (Toth, Munson, Meltzoff, & Dawson, 2006)
Why Does Imitation Matter?

Relationship between imitation and:

- Language skills
- Play skills
- Joint attention

(Ingersoll, 2008)
Building Block Skill

- Social Skills
- Language
- Play

Imitation
Functions of Imitation

Social function
  • A way in which young children have social and emotional interactions with others

Learning function
  • A way in which infants and children learn and develop new skills
“...since imitation serves both as learning tool and as social strategy, its disruption is likely to have a profound effect on learning and development”

(Ingersoll, 2008, p. 110)
Autism Spectrum Disorder

Diagnostic criteria (DSM-V, 2013):

• Deficits in social communication and social interaction skills

• Restricted, repetitive patterns of behavior, interests, or activities

• Symptoms are present in early childhood

• Symptoms results in impairment in daily functioning
Autism Spectrum Disorder

Differentially impaired in the ability to imitate compared with:

- Fragile X syndrome
- Developmental delay
- Typical development

( Rogers, Hepburn, Stackhouse, & Wehner, 2003; Stone, Ousley, & Littleford, 1997; Vivanti, Trembath, & Dissanayake, 2014)

Imitation is therefore a key skill to teach!
Assessing Imitative Skillsets

Can the child imitate...

- Actions with objects?
- Gross motor movements?
- While sitting across from a teacher?
- A teacher during circle time?
- Peers while playing?

(Schwartz et al., 2017)
Teaching in Applied Behavior Analysis

<table>
<thead>
<tr>
<th>Discrete Trial</th>
<th>Teaching Loop</th>
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<tbody>
<tr>
<td>• Instruction</td>
<td>• Provide a cue</td>
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<tr>
<td>• Prompt (optional)</td>
<td>• Give assistance (if needed)</td>
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Teaching in Applied Behavior Analysis

- **Embedded**
  - Taught within the context in which the child will be expected to perform that skill

- **Decontextualized**
  - Removed from context
Teaching Imitation

• Imitation Training
  o Based on research in applied behavior analysis going back to the 60s and 70s

• Reciprocal Imitation Training
  o Developed in the early 2000s (Brooke Ingersoll)
Imitation Training

Determine which type of imitation you are going to focus on:

- Actions with objects?
- Motor movements?

Identify 10+ actions that the child is already performing:

- Pushing a car, drinking from a cup, clapping hands, waving...

Separate these actions into groups of 2-4 in order to create sets of targets:

Actions with objects: Ideally, two sets of identical objects
Imitation Training

Instruction
• “Copy me;” “Do this;” “Do what I do;” “Do the same…”

Prompt
• Full physical, partial physical, gestural…

Child responds
• Accurately imitates; does not imitate

Consequence
• Praise / access to preferred item; corrective feedback
Imitation Training

Aim for 5-10 trials per teaching session
- 2-3 teaching sessions per day

Track progress
- Collect data: + / P / -
- Mastery criteria: 80% or 90% correct across 2-3 days

Teacher probes
- Assess whether generalization has occurred
- Imitative behaviors that were explicitly taught → Novel imitative actions
Imitation Training: Limitations

- Teaches copying another’s action(s) in response to a cue
  - Does not address spontaneous imitation

Addresses the *learning function* of imitation only
Imitation Training: Redeeming Qualities...

Starting point

Not many pre-requisite skills needed
What might be some challenges / barriers to using this approach to teach imitation skills to young learners?

What might be some solutions to those barriers?
Reciprocal Imitation Training (RIT)

“...a naturalistic intervention that targets generalized, spontaneous imitation skills in young children with autism during ongoing play interactions”

(Ingerson & Gergans, 2007, p. 164)

Combines strategies from the developmental & behavioral literatures

Recommended to be practiced for 20 minutes per day

• Can be “chunked” into 5-10 minute sessions
RIT: Components

• **Contingent imitation**: Imitation of the child’s actions (except for “inappropriate behavior”)

• **Linguistic mapping**: Ongoing description of what the child is doing

• **Modeling**: Approximately once every minute, the therapist models an action with a “verbal label” (description of the action) up to three times

• **Prompting**: If child does not imitate after models, physical guidance is used

• **Contingent reinforcement**: Praise is provided, and child continues with toy play
RIT: Step 1 – Select Materials

- Use toys child enjoys playing with
- Toys that can be used in more than one way
- Ideally, have two sets of the same or similar toys
- Have multiple sets out simultaneously
RIT: Step 2 – Contingent Imitation

- Be face-to-face
- Imitate play with toys
- Imitate gestures and body movements
- Imitate vocalizations
RIT: Step 3 – Linguistic Mapping

- Describe what you and the child are doing
- Use simple language that is slightly more complex than the child’s language
- Repetition!
RIT: Step 4 – Model

Model an action with the toy the child is engaged with
  • Goal = approximately once per minute

Use a “verbal label”
  • Short and clear

Model action up to three times
  • Wait 10 seconds after each model
  • Prompt child to perform the action

Provide praise for imitative responses
  • Provide more enthusiastic praise for independent responses
RIT: Limitations

Unclear which components of the treatment package are necessary for teaching imitation.

Majority of research studies looking at RIT have been conducted by the developer of the intervention package.

Unclear whether RIT may require pre-requisite skills in order to produce meaningful outcomes.
RIT: Redeeming Qualities...

Demonstrated to improve children’s use of imitation in response to a cue and spontaneous imitation after (Ingersoll, 2010)

• Addressing both learning and social functions of imitation

RIT has led to additional improvements in language, pretend play, and joint attention (Ingersoll & Schriebman, 2006; Ingersoll & Lalonde, 2010)
RIT: Turn and Talk

What might be some challenges / barriers to using this approach to teach imitation skills to young learners?

What might be some solutions to those barriers?
1. Determine where you will practice
   • How can you limit distractions in this setting?
   • Can you make a defined play space?

2. Determine when you will practice
   • E.g., the start, middle, or end of a home visit
   • When a the child arrives to class
   • During free play

3. Identify pairs of (similar or identical) toys/objects
   • Household objects – what might be available?
Incorporating Strategies into EI Work

Naturalistic approach

1. Face the child

2. Imitate the child’s play
   • Actions with objects, motor movements, vocalizations

3. Model an action while using a “verbal label” up to 3 times
   • Do this frequently! Ideally, about once per minute
   • If child does not imitate action, provide guidance

4. When child imitates (with or without support) ➔ Enthusiastic PRAISE
Structured Approach

Some children require more structure in order to make meaningful progress

1. Pick 2-4 specific actions and practice those
   - Repetition is your friend!

2. Replace verbal label with specific instruction
   - “Do this;” “Copy me;” “Do the same…”

• The incorporation of mirrors has facilitated quicker acquisition of motor imitation (Du & Greer, 2014; Miller, Rodriguez, & Rourke, 2015)
# Teaching Imitation

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## Additional Considerations

- Limit distractions in the environment
- Face the child
- Track / Collect data on learner’s performance
  - + = correct
  - P = prompted
  - - = incorrect
Action Planning

• Think of a child you work with

• When and where might you be able to work on imitation?

• What toys/objects might you use?

• What obstacles might you face?

• How might these obstacles be addressed?
References


