

## Module: Discrete Trial Training (DTT)

### CASE STUDY EXAMPLES

#### Steven

##### ***Step 1. Deciding What to Teach with Discrete Trial Training***

Steven, a 21-month-old child with autism, remains nonverbal and does not consistently respond to the social interactions of others. Steven's parents are extremely concerned that these deficits will continue to negatively impact his development, and especially his success in a preschool or kindergarten classroom. His parents have gathered together an educational team consisting of key family members/caregivers, an early interventionist, a speech language pathologist, and an occupational therapist. Steven's speech and language pathologist explained to the team that gross motor imitation is an important developmental step toward verbal imitation and language development. Imitation skills, being a cornerstone to learning, will help Steven respond to social interactions, prepare him for verbal imitation lessons, and prepare him for all the social-communicative imitation found throughout school settings. These points align closely with the priority concerns of Steven's family. For example, his mother wants Steven to follow the actions and lyrics to typical preschool songs like "Itsy-bitsy spider" and a "good morning" circle time song. His father wants to make sure Steven has the skills to watch the teacher and his peers, so he can complete a preschool art project or simply line up when everyone else is lining up for recess. After the team meeting, everyone agrees that imitation is a fundamental skill for Steven's language, social, and cognitive development.

Steven's social interests at this time are fairly limited. He enjoys tickles and some "rough and tumble play," but does not initiate many social interactions with others. Steven enjoys Disney movies and he loves to eat vanilla wafers. Steven's early interventionist suggested starting with discrete trial training to begin teaching basic imitation skills. She further explained that once Steven started to demonstrate a repertoire of gross motor imitation behaviors (i.e., clapping hands, touching body parts, waving, etc.), the team should transfer those behaviors to more naturalistic teaching activities to promote generalization (i.e., embedding these actions into songs, games, communications such as waving "hello" or "goodbye"). The team writes the following goal: When given a verbal instruction such as "Do this," or "Copy me" paired with a modeled gross motor movement (i.e., clapping hands, touching head, waving hand, jumping, sitting down, etc.), Steven will independently imitate the gross motor movement 80% of opportunities presented.

##### ***Step 2. Breaking the Skill Down into Teachable Steps***

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The team decides to target five gross motor behaviors. The occupational therapist is consulted when determining target gross motor behaviors. They decide on behaviors that are easy for Steven to demonstrate, and actions that can easily be generalized to more natural settings/activities, such as songs or games. The five gross motor behaviors are clearly defined:

1. Clap hands – Putting both hands together, open palmed, to make a noise one or more times
2. Tap head – Touching either or both hands to the top or side of the head
3. Sit down – Sitting on the floor or in an adjacent chair (within 1 – 2 feet away)
4. Wave – Waving a hand with an open palm several times, side to side
5. Jump – While standing, jumping so that feet leave the ground

#### ***Step 3. Setting-up the Data Collection System***

The team reviews various data collection sheets to keep track of Steven's progress toward imitating target gross motor actions. The team decides to use a data collection system that scores the first ten trials presented for each target action. Because independent imitation is the ultimate goal, the team designs a scoring key to track independent response (i.e., no prompts required), incorrect or prompted responses, and no responses. The scoring key is as follows:

**Independent correct response = (+)**

**Prompted or incorrect response = (-)**

**No response = (0)**

The number of correct responses will be converted to a percentage at the end of each session. Team members agree to target and record data on imitation behaviors several times per day. Team members will record the date of each session, the gross motor behavior being targeted, and type of response for the first ten trials of each session.

#### ***Step 4. Designating Location***

Team members agree that sessions can be implemented across many settings. Most team members agree that finding a space with few distractions would be best, especially when beginning the intervention. Once Steven begins to learn a target behavior, however, the team thinks it would be valuable to start generalizing the lessons across different settings.

#### ***Step 5. Gathering Materials***

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Steven's family members have been helpful in identifying reinforcers for Steven. The team determines that each time Steven independently imitates a target behavior; he will be immediately reinforced with tickles or a small piece of vanilla wafer. Once Steven begins to learn a few gross motor imitations (or if his motivation to follow lesson instructions or prompts begins to fade), then the team wants to incorporate 1 – 2 minutes of watching a Disney movie as another reinforcer to maintain Steven's motivation. Eventually, the team wants to create small picture icons of each reinforcer and teach Steven how to choose an available reinforcer for correctly responding to instructions.

#### ***Step 6. Delivering the Trials***

Before beginning the discrete trial training, Steven's mother assesses Steven's current baseline levels of performance as the other team members observe. She secures Steven's attention by saying his name and touching his chest. Once he looks at her she says, "Do this" or "Copy me" and demonstrates one of the target gross motor actions. Steven does not respond to any of her instructions to imitate. Steven's father collects the corresponding data by marking a (0) or (-) next to each trial.

The trials are repeated across multiple days. Data collection is conducted during each session for the first ten trials. The focus of the following sessions is determined by the data from the previous trials. The trials take place for approximately two weeks before the team analyzes the data and re-evaluates.

#### ***Step 7. Massed Trial Teaching***

Based on the baseline data and observations, the behaviorist suggests that a most-to-least prompting approach be used to teach Steven the new skills. The team decides to mass trial each target behavior using this prompting approach. The behaviorist models this approach for the team. She decides to target "clap hands." She secures Steven's attention by saying his name and tapping his shoulder if necessary. When Steven looks at her, she says, "Do this" and claps her hands one or two times. She waits about two or three seconds, but Steven does not respond and he starts walking toward her. She delivers some corrective feedback by saying, "No, try again." She redelivers the command "Do this" and claps her hands two times. This trial, she immediately prompts Steven by taking both of his hands, holding them open, and clapping them together two times. She then immediately praises Steven enthusiastically and gives him a little tickle until he giggles. She explains to the team that she implemented an error correction procedure and used a full physical prompt to help Steven follow the direction and then immediately reinforced him with a tickle. She instructs Steven's father to mark the first trial a (0) because Steven did not respond, and the second trial a (-) because she used a prompt to help him imitate the action. The behaviorist continues to deliver the

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instruction, alternating between “Do this” and “Copy me,” and modeling the hand clap action. Steven’s father continues to take data. The next seven trials she uses a full physical prompt to help Steven successfully imitate the action, and then reinforces him with a tickle. On the tenth trial, the behaviorist says, “Copy me” and claps two times. Everyone watching noticed that Steven watched her hands more closely this time and then began to put his palms within two inches from each other. The behaviorist lightly tapped the back of his hands, and Steven finished the clap. The team noted this small step toward progress. Steven’s mother even helped give her son a tickle for his efforts. The data still showed the tenth trial a (-), but more practice was certain to earn Steven’s first (+). After a break, team members took turns mass trialing each imitation target.

#### ***Step 8. Conducting Discrimination Training***

Two weeks later, Steven was successfully imitating 4 out of the 5 target actions at least 80% of opportunities recorded. The team decided to begin discrimination training on two of the mastered actions (clap hands and touch head) while continuing to mass trial the other actions. The behaviorist modeled the discrimination training by delivering two trials of clap hands, which Steven imitated independently. On the third trial, the behaviorist instructed, “Do this,” and touched her head. Steven clapped his hands. The behaviorist immediately delivered corrective feedback, “No, try again.” She then delivered the instruction “Do this,” and touched her head. As Steven moved to clap his hands again, she implemented a physical prompt to redirect his hands to touch his head. She told him, “Good job” and then repeated the previous command, “Do this” while touching her head. Steven touched his head and the behaviorist immediately tickled Steven until he giggled. She then proceeded to deliver several trials of each target action, but periodically alternated between “clap hands” and “touch head.” The behaviorist was teaching Steven to discriminate between “clap hands” and “touch head.” She instructed Steven’s father to only collect data on trials where she alternated between “clap hands” and “touch head.”

#### ***Step 9. Review and Modify***

After a month of conducting the discrete trial training on imitating five gross motor actions, the team reviews Steven’s progress. The team looks at the collected data and sees that over the past ten days Steven has mastered all five actions and can discriminate each action when randomly rotated. The team now decides to incorporate these learned actions into a silly preschool song and a game of “Simon Says.” The team also decides to introduce five new gross motor actions and five new fine motor actions.