



## INFORMATION SHEET

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### Discrete Trial Training (DTT)

**What is it?** This is a one-to-one instructional approach used to teach skills in a highly controlled, step-by-step manner in order to **reduce problem behaviors** and **teach functional replacement** or alternative behaviors. DTT is based on the understanding that practice helps a child learn and master a new skill. DTT is sometimes also called Discrete Trial Teaching, Discrete Trial Instruction, or Discrete Trial Procedure. This is an evidence-based method within the Behavioral Package in the *Missouri Autism Guidelines Initiative (MAGI) ASD: Guide to Evidence-based Interventions*. It is based on basic Behaviorist theoretical principles that link good or taught behavior to learned association with reinforcement. Treatments falling in the MAGI Behavioral Package reflect research from the fields of applied behavior analysis, behavioral psychology, and positive behavior supports.

**When should it be used?** DTT is used when children need to learn a skill best taught in small repeated steps. Each trial or teaching opportunity has a definite beginning and end, thus the descriptor discrete trial. It has been found effective for improving skills in Communication and Behavior. Research does **not** indicate effective use of DTT for Social and Academic skill areas. In addition, the age range supported by evidence for effective use of DTT is from 2 to 9 years.

#### The Five Steps of a Discrete Trial Training session

1. Antecedent = what happens BEFORE the target behavior to start the trial
2. Prompt = adult supports to ensure a correct/successful response
3. Response = child's behavior (hopefully the skill being taught, with good prompts)
4. Consequence = what happens AFTER the behavior to end the trial
5. Inter-trial interval = brief period of time delay to further designate separate discrete trials

**SAMPLE SCENERIO:** Natasha is a preschool student who has just begun attending a public school Early Childhood Special Education class four half-days a week in small town Missouri. She has limited expression of five to ten echoed words as well as a few learned gestures and she has difficulty following the class routine and directives. Teachers report she appears to be noncompliant, refusing to complete what are considered simple tasks like picking up her toys, putting trash in the waste basket, and sitting down when asked. These would be examples of three discrete skills (pick up, put in, & sit down) that could be taught in small repeated steps focusing on use of immediate reinforcers for quick skill acquisition. Let's consider the five steps above to teach these new skills using DTT to Natasha.

1. **Antecedent:** First we have to decide on a clear and consistent directive to give Natasha. This should start out as a simple verbal phrase instructing Natasha to do the new skill or behavior: “pick up”, “put in”, or “sit down”. In DTT, antecedents should gradually get more complex and be presented in varying ways by varying people, but only AFTER Natasha is 100% successful mastering each previous instruction or step.
2. **Prompts:** Next one adult will consistently work one-to-one with Natasha in a series of 10 or more discrete and brief trials. For success, the adult must provide whatever supports it takes to get an accurate response from Natasha so that the preferred reinforcement can be given. Supports may be as invasive as a hand-over-hand motoring through the new skill with adult assistance or as limited as a simple gestural or eye gaze cue towards the object of the behavior being taught. Physical, verbal, or visual cues may be used specific to the needs of each individual child and must continue to be provided for each of the 10 or more trials to obtain the reinforcement for each individual try. Prompts should fade from most invasive to least invasive quickly to avoid teaching prompt dependency. (Prior to starting the DTT method, a **reinforcement inventory** must be completed to ensure the reinforcers are engaging and will be strong motivators for Natasha – *check out the Reinforcement Fact and Information Sheets to learn more*).
3. **Response:** This is simply tracking what Natasha does in response to the adult’s antecedent (or short directive - “pick up”, “put in”, or “sit down”). Collecting data is an integral part of DTT, so the adult would track what level of prompting was required for each of the 10+ trials in order to achieve the correct response. Meaning, if the teacher said “pick up” and then had to model picking up for Natasha to successfully put in herself, then the teacher would track the correct behavior with a model level of prompting for that discrete trial. Let’s say a single block is sitting on the table in front of Natasha to be picked up. The teacher says “pick up” and pauses briefly but Natasha does not respond, then the teacher could say “pick up” again and pick up the block herself to model the correct response. Then return the block to the table and instruct Natasha again “pick up” at which time Natasha successfully picks up the block. There may be times, especially at the beginning of DTT that the response may be incorrect or as in this example, Natasha may have no response at first, however the individual discrete trial is not actually complete until the correct response is prompted successfully.
4. **Consequence:** (correct and incorrect responses) Typically, we think of a consequence as negative or a punishment, but in DTT the consequence just means whatever occurs after the child’s response. A consequence of Reinforcement is **immediately** given after a correct response for EVERY correct response even when it must be fully prompted, with hand-over-hand assistance, in order for the child to be successful with the antecedent/directed behavior. This is how the behaviorist theory works to associate the specific skill with the immediate reinforcement/consequence. In our example, Natasha initially gave no response so the consequence was a brief pause, then additional prompt in the form of modeling by the adult quickly followed by another attempt for Natasha. When she then picked up the block, the adult with instantaneously provide an enthusiastic reinforcer such as blowing

bubbles or shaking a preferred noisemaker, whatever we know Natasha loves. IF Natasha's response had been Incorrect (for example, if she tried to push the block), then no reinforcement is given, the adult simply says "nope", and the Antecedent/directive is quickly spoken again with whatever needed prompts to achieve a successful response. Yeah! Natasha is well on her way to learning that if she follows the direction to pick up, she will get one of her favorite things. Remember prompts will fade quickly, but reinforcers do not in DTT.

5. **Inter-trial Interval:** This step refers to providing a brief pause between each discrete trial, not long enough to lose Natasha's interest, but just to clearly delineate a beginning and ending of each individual trial. Initially in DTT, the same antecedent is repeated for 10 (+) trials until Natasha is able to give the correct response independently without any prompting for all consecutive trials. For effective DTT method of Mass Trial Teaching, multiple repetitions need to be conducted without interruption for a concentrated period of time or until the child's attention can no longer be focused on the session and/or selected reinforcers. Typically, 10 discrete trials are repeated for each individual antecedent directive. This also allows for easy data collection and percentages.

Find out more in the Parent's Guide at

[https://www.autismspeaks.org/docs/sciencedocs/atn/atn\\_air-p\\_applied\\_behavior\\_analysis.pdf](https://www.autismspeaks.org/docs/sciencedocs/atn/atn_air-p_applied_behavior_analysis.pdf)

For Additional Information Reference:

National Professional Development Center on Autism Spectrum Disorders

<http://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/imce/documents/Discrete-Trial-complete10-2010.pdf>

The Missouri Autism Guidelines Initiative ASD: Guide to Evidence-based Interventions

<http://autismguidelines.dmh.mo.gov/documents/Interventions.pdf>

Educate Autism: tools to help you teach. A website by Gavin Cosgrave and Dr. Lasairíona

McGuinness, BSc. MSc. PhD in Ireland <http://www.educateautism.com/applied-behaviour-analysis/discrete-trial-training.html>

Autism Community <http://www.autism-community.com/what-is-discrete-trial-teaching/>

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