Time Delay (TD)

**Brief Introduction**
Time delay (TD) is a practice that focuses on systematically fading the use of prompts during instructional activities.

**Description**
With the time delay (TD) procedure, a brief delay is provided between the initial instruction and any additional instructions or prompts. The evidence-based research focuses on two types of time delay procedures: progressive and constant. With *progressive time delay*, the adult gradually increases the waiting time between an instruction and any prompts that might be used to elicit a response from a learner with ASD. For example, a teacher provides a prompt immediately after an instruction when a learner with ASD is initially learning a skill. As the learner becomes more proficient at using the skill, the teacher gradually increases the waiting time between the instruction and the prompt. In *constant time delay*, a fixed amount of time is always used between the instruction and the prompt as the learner becomes more proficient at using the new skill. Time delay is always used in conjunction with a prompting procedure (e.g., least-to-most prompting, simultaneous prompting, graduated guidance).

TD meets evidence-based criteria with 12 single-case design studies. According to the evidence-based studies, this intervention has been effective for preschoolers (3–5 years) to young adults (19–22 years) with ASD. TD can be used effectively to address social, communication, behavior, joint attention, play, cognitive, school-readiness, academic, motor, and adaptive skills.

**Brief Adapted from**


**Matrix of TD by Outcome and Age (years)**

<table>
<thead>
<tr>
<th>Social</th>
<th>Communication</th>
<th>Behavior</th>
<th>Joint Attention</th>
<th>Play</th>
<th>Cognitive</th>
<th>School Readiness</th>
<th>Academic</th>
<th>Motor</th>
<th>Adaptive</th>
<th>Vocational</th>
<th>Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–5</td>
<td>15–22</td>
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</tbody>
</table>

**Research Summary: Time Delay (TD)**

<table>
<thead>
<tr>
<th>Ages</th>
<th>Skills/Intervention Goals</th>
<th>Settings</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>4–11 years</td>
<td>Social, communication</td>
<td>Home, school, clinic</td>
<td>EBP</td>
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</table>

*The information found in the Research Summary table is updated yearly following a literature review of new research and this age range reflects information from this review.
Time Delay (TD)

Research


August 2015
Time Delay (TD)


References

Time Delay (TD)
Steps for Implementation

Step 1. Identifying Target Skill/Behavior(s)

A. Define the target skill/behavior in terms that are observable and measurable.

B. Identify the target skill/behavior as being either:
   i. a discrete task or
   ii. a chained task

C. Define learner response behaviors.

Step 2. Determining Current Skills

A. Assess a learner’s current skills by directly observing the learner during daily routines and activities.

B. Determine a learner’s current ability to:
   i. respond to instructional cues,
   ii. wait,
   iii. imitate others,
   iv. stay seated during individual or small group work time,
   v. increase positive behaviors in response to reinforcers, and
   vi. follow one-step instructions.

Step 3. Selecting the Target Stimulus and Cue/Task Direction

A. Identify one of the following as the target stimulus:
   i. a naturally occurring event,
   ii. completion of one event or activity, or
   iii. an external signal

B. Select at least one of the following cues to begin the teaching activity:
   i. material or environmental manipulation,
   ii. task direction, or
   iii. naturally occurring event.

Step 4. Selecting the Controlling Prompt

A. Try different prompts to identify ones that successfully elicit the desired response.
Time Delay (TD)

**Step 5. Identifying Reinforcers**

A. When choosing reinforcers for a learner with ASD, identify:
   i. what has motivated the learner in the past and
   ii. the learner’s deprivation state.

B. Identify a reinforcer that is appropriate for the target skill/behavior and instructional task.

**Step 6. Determining the Response Interval**

A. When determining the length of the response interval, consider:
   i. learner characteristics and
   ii. task characteristics.

**Step 7. Identifying Activities and Times for Teaching**

A. Identify one regular time during the day when the target skill/behavior can be taught and measured.

B. Identify how many trials will be implemented during instructional activities.

**Step 8. Establishing Learner Attention, Delivering the Stimulus, and Providing the Cue**

A. Gain the learner’s attention by:
   i. delivering the target stimulus,
   ii. using an attention-getting strategy, and
   iii. presenting the cue or task direction.

**Step 9. Implementing the Time Delay**

A. After securing the learner’s attention, presenting the target stimulus, and delivering the cue/task direction, immediately deliver the controlling prompt.

B. If the learner’s response is correct, immediately provide positive feedback by:
   i. offering reinforcement (e.g., praise, access to materials, break) and
   ii. stating what the learner did (“You said, ‘More.’ Here’s more snack.”).

C. If the learner’s response is incorrect or if the learner does not respond, ignore the response and go on to the next trial.
Time Delay (TD)

**Step 10. Increasing the Delay**
(With this step, use either constant or progressive time delay. Once a time delay procedure has been chosen, follow the appropriate steps for implementing that procedure).

**Constant Time Delay**

A. Present the cue to the learner.

B. Wait 3 to 5 seconds for the learner to use the target skill/behavior.

C. If the learner’s response is correct, immediately provide positive feedback by:
   i. offering reinforcement (e.g., praise, access to materials, break) and
   ii. stating what the learner did (e.g., “You said, ‘More.’ Here’s more snack.” “You said, ‘Two times two is four.’ That’s right. Two times two is four.”).

D. If the learner’s response is incorrect, ignore the response and go on to the next trial.

E. If the learner does not respond during the response interval:
   i. deliver the controlling prompt and
   ii. insert the response interval.

F. If the learner responds correctly after the prompt (prompted correct), immediately provide reinforcement.

G. If the learner responds incorrectly after the prompt (prompted error), ignore the response and go on to the next trial.

H. If the learner does not respond after the prompt (no response), ignore the learner and go on to the next trial.

**Progressive Time Delay**

A. Present the cue to the learner.

B. Wait, using the increased delay time, before prompting the learner to use the skill.

C. If the learner’s response is correct, immediately provide positive feedback by:
   i. offering reinforcement (e.g., praise, access to materials, break) and
   ii. stating what the learner did (e.g., “You said, ‘More.’ Here’s more snack.” “You said, ‘Two times two is four.’ That’s right. Two times two is four.”).

D. If the learner’s response is incorrect, ignore the response and go onto the next trial.

E. If the learner does not respond during the response interval:
   i. deliver the controlling prompt and
   ii. insert another response interval.
Time Delay (TD)

F. If the learner responds correctly after the prompt (prompted correct), immediately provide reinforcement.

G. If the learner responds incorrectly after the prompt (prompted error), ignore the response and go on to the next trial.

H. If the learner does not respond after the prompt (no response), ignore the learner and go on to the next trial.

Step 11. Monitoring Progress

A. Record the number of correct/incorrect learner responses during the teaching activity.

B. Review progress monitoring data after two teaching activities to determine the learner’s mastery of the target skill/behavior.

C. Gradually increase the time delay (e.g., by 1-second intervals) as learners demonstrate 100% mastery of the target skill/behavior during the previous activity.