Module: **Time Delay**

Steps for Implementation: Time Delay

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Time delay is a practice that focuses on fading the use of prompts during instructional activities while also delivering reinforcement to increase the likelihood that target skills/behaviors will be used in the future. This practice is always used in conjunction with prompting procedures such as least-to-most prompting, simultaneous prompting, and graduated guidance. ***To learn more about specific prompting procedures, please refer to the Evidence-Based Practice Brief: Prompting (National Professional Development Center on ASD, 2009).*** The evidence-based research focuses on two types of time delay procedures: progressive and constant. With *progressive time delay*, teachers and other practitioners gradually increase the waiting time between an instruction and any prompts that might be used to elicit a response from a learner with ASD. With *constant time delay*, there is no delay between the instruction and prompt when a learner is first learning a skill. However, with 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.

Both procedures use two types of trials: 0-second trials and delay trials. In both procedures, the 0-second trials are identical. The teacher presents the target stimulus and task direction, and immediately presents the controlling prompt (before the learner has an opportunity to respond). The 0-second trials are used during initial instruction (e.g., for the first couple sessions), and then the delay trials are used for the remainder of instruction. The procedures are different only in how the delay trials are used. With the *constant time delay* procedure, the controlling prompt is delayed for a fixed number of seconds (usually 3, 4, or 5). These trials are used until the learner with ASD masters the skill. With the *progressive time delay* procedure, the response interval between the presentation of the target stimulus and the controlling prompt is gradually (progressively) increased over blocks of trials or sessions. For example it may increase by 1 second for each session until it gets to some final level (e.g., 5 or 6 seconds).

Both progressive and constant time delay procedures include the following three components that comprise a trial: (1) a cue and target stimulus that tell learners to use the target skill/behavior (antecedent), (2) learner response (target skill/behavior), and (3) feedback (consequence). These three components are critical to implementing time delay procedures effectively. Descriptions of each of these components are provided in the following sections.

Target Stimulus (Antecedent)
The target stimulus is the "thing" or "situation" to which we want the learner to respond by doing the target skill/behavior.

EXAMPLES
- If a learner's hands are dirty from finger painting, the learner's dirty hands serve as the target stimulus to wash hands (the target skill/behavior).

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- If the child wants a toy a peer has, the target stimulus is the toy and the peer. The target skill/behavior is asking for the toy.
- If the goal is for the learner to name a picture, then the picture is the target stimulus.

Cue (Antecedent)
A cue is a signal that helps learners identify skills or behaviors they should be using. For example, a teacher could give learners a picture with a child washing his hands. The picture cue reminds learners to walk to the sink and begin washing their hands. When using time delay, the cue should be consistent so that learners know exactly what they are supposed to be doing during an activity.

Learner Response (Target skill/behavior)
Learner response is essentially the target skill/behavior that teachers and other practitioners want the learner to acquire. Learners are more likely to use the target skill/behavior accurately when the cue is clear and consistent. However, learner responses and use of target skills/behaviors are not always successful. Therefore, learner responses are classified as either correct or incorrect.

Feedback (Consequence)
The reinforcement and feedback provided after a learner's response is critical for teaching the target skill/behavior. When learners use skills successfully or respond accurately, feedback is highly positive and descriptive so that learners know exactly what they did that was correct. Positive feedback (i.e., reinforcement) increases the likelihood that the target skill/behavior will be used correctly in the future. Feedback for incorrect responding, or incorrect use of target skill/behavior(s), is referred to as a correction procedure and is delivered consistently after an incorrect response. This type of feedback generally consists of repeating the cue and providing any prompting that is necessary for the learner to use the skill successfully. Time delay procedures are always used in conjunction with prompting and reinforcement strategies. **Please refer to *Prompting: Steps for Implementation* (National Professional Development Center on ASD, 2008) and *Positive Reinforcement: Steps for Implementation* (National Professional Development Center on ASD, 2008) for more information about prompting and reinforcement.**

Preparing for the Intervention

Step 1. Identifying Target Skill/Behavior(s)

In Step 1, teachers and other practitioners define the target behavior or skill that they want a learner with ASD to acquire. This needs to be done with both the constant and progressive time delay procedures.

1. Teachers/practitioners define the target skill/behavior in terms that are observable and measurable.

For example, "Ling will increase her language skills" is not an observable or measurable definition of a target skill/behavior. On the other hand, the definition, "Ling will use a noun (actor)

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and verb (action) when describing pictures depicting actions" allows teachers/practitioners to directly observe the target skill/behavior and measure the learner's progress.

2. Teachers/practitioners identify the target skill/behavior as being either:

   a. *a discrete task*. A discrete task is one that requires a single response and has a short duration. For example, pointing to objects, picking up the correct letter, naming pictures or objects, reading words, writing the answers to simple math problems, greeting a peer who enters the room, and answering questions are discrete tasks; or

   b. *a chained task*. Chained tasks involve a series of behaviors in a given sequence to complete a complex skill. Chained tasks require teachers/practitioners to determine (1) the number and sequence of steps in the chain, (2) whether to teach one step at a time, or (3) whether to teach all steps at the same time. Examples of chained tasks include washing hands, making a sandwich, eating a meal, getting dressed, putting on a coat, cooking, and transitioning from one class to the next. In general, teaching the entire chain at the same time is recommended.

3. Teachers/practitioners define learner response behaviors.

Before implementing time delay procedures, teachers and other practitioners define learner response behaviors so that they can easily identify correct or incorrect responses during the teaching activities. For example, if a target skill/behavior for a learner with ASD is to request, then the teacher or other practitioner must specify exactly what a request is. Is "Help" considered a correct response? Or should the learner be expected to say, "I need help, please"?

Step 2. Determining Current Skills

The next step is to identify a learner's current skills. This is particularly important when implementing time delay because some prerequisite skills are needed (e.g., waiting, imitating, attending) before the practice can be used to teach a target skill/behavior. Through this process, teachers/practitioners can determine a learner's current ability to use the skills and participate in the activity successfully. This assessment of skills often is completed through direct observation. Anecdotal notes (i.e., running records) can be helpful in identifying skills that a learner uses throughout the day.

1. Teachers/practitioners assess a learner's current skills by directly observing the learner during daily routines and activities.

The following table illustrates how teachers or other practitioners can assess a learner's current skills using anecdotal notes.

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Time	Activity	Behavior
8:30-9:00	Free Play	Sarah watched peers in block area for 5 minutes. Sarah wandered the classroom flapping hands for 5 minutes. Sarah walked to table where 3 other children were playing with playdough and wooden hammers. Children were banging hammers in the playdough. Sarah watched children for about 2 minutes then picked up hammer and started to bang in the playdough as well. Sarah stayed at this activity for 5 minutes.
9:00-9:30	Snack	Sarah sat down at table that had plates, but no snack. Sarah looked at teacher, but did not say anything. Teacher began to serve crackers and juice. Sarah sat in chair and looked at her picture taped on the table. Sarah was the third child to receive snack. She did not request, but sat quietly.

Using results from the direct observations, teachers and other practitioners can then determine whether or not the learner has the prerequisite skills needed to participate in the learning activity. Some of the skills are more critical than others. For instance, a learner should be able to wait and stay seated before time delay can be implemented. Other prerequisite skills (i.e., responding to instructional cues, imitating others, increasing positive behaviors, following one-step instructions) provide teachers/practitioners with important information that can be used to increase the success of the intervention. For example, observations of learners responding to instructional cues throughout the day help teachers/practitioners determine the types of cues (e.g., direct instructions, environmental arrangement, written instructions) that are successful with individual learners.

2. Teachers/practitioners determine a learner's current ability to:

   a. *respond to instructional cues.* Learners with ASD must look in the direction of the teacher when a cue or attention-getting strategy is used.

   b. *wait.* With constant time delay in particular, learners must be able to wait for a prompt if they are not certain of the correct response. In general, learners should be able to wait for approximately four seconds.

   c. *imitate others.* Learners with ASD must be able to imitate others because this is a key part of the instructional process. When initially teaching a skill, teachers or other practitioners provide a cue, wait for the learner to respond, and then provide a prompt to teach the target skill/behavior. For example, if the target skill/behavior is requesting, then the learner must be able to imitate the phrase, "More, please," after the teacher models it for him.

   d. *stay seated during individual or small group work time.* Learners with ASD must be able to stay seated during individual or small group work times in order to benefit from the intervention. Generally, learners with ASD should be able to stay at an activity for 5 to 10 minutes before time delay procedures can be used to teach skills.

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e. *increase positive behaviors in response to reinforcers*. Learners with ASD should have a history of using behaviors more frequently after appropriate reinforcers have been provided.

f. *follow one-step instructions*. Learners should be able to follow simple instructions such as "Get coat," "Wash hands," and "Clean up." Being able to follow written one-step instructions or respond to transition objects/cards also can be counted for this skill.

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

In Step 3, teachers and other practitioners identify: (a) the target stimulus and (b) the cue or task direction. This must be done with both the constant and progressive time delay procedures. The target stimulus is the event, thing, or situation to which the learner with ASD should respond to when the teacher/practitioner is not present or when the learner has mastered the target skill/behavior.

EXAMPLES:
- When teaching learners to play, the toy is the target stimulus.
- When teaching a learner to initiate social interactions, the presence of a peer is the target stimulus.
- When teaching a learner to read words, the presence of text is the target stimulus.

The cue or task direction also is important in the planning and teaching process because it signals the learner to engage in the target skill/behavior. Often cues or task directions are verbal statements by the teacher. These statements do not tell learners how to complete target skills/behaviors, but they tell them that a certain behavior is expected. Target stimuli may be part of an activity, the teacher, peers, or be in the natural environment. Cues and task directions often are added to the environment. For example, in teaching a child to speak to his peers, the target stimulus is the presence of the peer, and a cue or task direction might simply be a general reminder at the beginning of the session to "Talk with your friends when you play." When teaching a learner to read words, the words are the target stimulus, but the cue or task direction may be the teacher saying, "What's this word?"

Target stimuli should be clear and consistent so that they are successfully linked to the reinforcement that is provided after completing a target skill/behavior. Cues and task directions are used to speed up instruction and let children know they should do something.

1. Teachers/practitioners identify one of the following as the target stimulus:

   a. *a naturally occurring event*. Examples: Having dirty hands after playing with finger paints is the target stimulus for hand washing; needing to use the bathroom is the target stimulus for asking to use the restroom or moving to the bathroom and using it;

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    b. *completion of one event or activity.* Examples: completing an instructional activity is the target stimulus for putting materials away, cleaning up the area, and moving to the area for the next activity; finishing one job is the target stimulus for doing the next job (e.g., finishing stocking a shelf in the store is the target stimulus for taking the boxes to the trash); or

    c. *an external signal.* Examples: a ringing bell may signal that it is time to go to the next class; that a work shift is completed in an employment situation; or that the clothing is dry and should be taken from the dryer, sorted, folded, and put away.

Sometimes the external event may be something someone else does. For example, when the teacher passes out a test, this may be the target stimulus for learners to write their names on the answer sheet; or a peer greeting the learner with ASD is the stimulus for returning the greeting; or when someone asks a question, this is the target stimulus for answering. Clearly specifying the target stimulus ensures that learners are attending to the target stimulus before starting the chain, reducing dependence on teacher instructions and prompts.

  2. Teachers/practitioners select at least one of the following cues to begin the teaching exchange (trial):

    a. *material or environmental manipulation.* Example: getting the materials set up and ready before the learner comes to the activity (e.g., setting up tasks for individual work time, setting the table before snack, placing playdough and toys on the table, arranging desks for small group work).

    b. *task direction.* Examples: telling learner to get his coat on to go home, giving a picture card to go wash hands, presenting a flashcard with a sight word on it and asking, "What is this?"

    c. *naturally occurring event. Examples:* ringing phone, fire alarm, school bus arriving after school.

Step 4. Selecting the Controlling Prompt

In Step 4, teachers/practitioners select a prompt which ensures that the learner with ASD performs the target skill/behavior correctly. This prompt is referred to as the controlling prompt.

  1. Teachers/practitioners try out different prompts to see which ones are successful in getting the learner with ASD to do the task correctly.

The issue is not whether the prompt occasionally gets the learner to do the behavior. A controlling prompt elicits the correct behavior on a very consistent basis – nearly every time it is used. In general, teachers and other practitioners should use the least intrusive prompt that is still controlling. For example, if pointing to the sink and saying, "Better wash your hands" is enough to get the learner to start the sequence of washing hands, then that would be better

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than using a physical prompt. Models are good prompts, but learners must be able to imitate for modeling prompts to be effective.

Step 5. Identifying Reinforcers

Step 5 is focused on selecting reinforcers that are appropriate for individual learners with ASD, task demands, and target skills/behaviors. The goal of reinforcement is to increase the likelihood that the learner with ASD will use the target skill/behavior again in the future. Therefore, selected reinforcers should be highly motivating to the learner with ASD.

1. When choosing reinforcers for learners with ASD, teachers/practitioners identify:

    a. what has motivated learners in the past and

    b. learners' deprivation state (i.e., What do they want that they can't easily get?).

2. Teachers/practitioners identify a reinforcer that is appropriate for the target skill/behavior and instructional task.

The chosen reinforcer should be as natural as possible. That is, it should be related to the activity that is being implemented. For example, it would be natural for a learner with ASD to get free time or have access to a preferred activity/object after taking part in a challenging, non-preferred learning activity. Another example would be to use food as a reinforcer during food related activities such as snack time or lunch when the target skill/behavior is requesting "more" or talking with peers. Two critical things to remember about reinforcers are (a) they are individually determined, and (b) they may lose their power with repeated use.

Some examples of positive reinforcement include:

*   preferred activity/favorite toy (e.g., special job, squishy ball, sand table),
*   free time,
*   verbal praise,
*   food-related activity,
*   opportunities to be away from others,
*   objects used in stereotypic behavior,
*   preferred games and activities, and
*   time with a preferred adult or peer.

Please refer to *Positive Reinforcement: Steps for Implementation* (National Professional Development Center on ASD, 2008) for more information about reinforcement.

Step 6. Determining the Response Interval

Two types of trials are key components of both constant and progressive time delay: 0-second trials and delay trials. These two types of trials differ only by the response interval used.

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In the *0-second trials*, the teacher secures the learner's attention, presents the target stimulus, delivers a task direction, immediately presents the controlling prompt, and then provides a response interval.

In the *delay trials*, the teacher (a) secures the learner's attention, (b) presents the target stimulus, (c) delivers a task direction, and (d) inserts a response interval. If the learner does not respond to the task direction, teachers/practitioners provide a prompt along with a response interval that gives the learner the opportunity to use the target skill/behavior correctly. To select the length of the response interval for the constant and progressive time delay procedures, teachers and other practitioners consider both learner characteristics and task difficulty.

1. When determining the length of the response interval, teachers/practitioners consider:

    a. *learner characteristics.* Teachers/practitioners should consider factors such as how long it usually takes the learner to respond when the learner knows how to do the behavior. Adding a couple seconds to this usual time is generally adequate for determining the length of the response interval.

    b. *task characteristics.* Teachers/practitioners might consider how long it takes another learner with ASD to use a similar skill. For example, if it takes another learner 4 seconds to respond to a verbal prompt, then the teacher might try using 4 seconds as the response interval for this particular learner with ASD. Teachers/practitioners also should consider the amount of time a learner will be allowed to *begin* a task as well as how long the learner will have to *complete* the task. For example, a learner with ASD may begin writing his name within 4 seconds of the cue; however, it may take him 2 minutes to complete the task. In this case, setting the response interval at 6 seconds for the learner to start the task, and 2.5 minutes to complete it is reasonable. For tasks that require more than one step (e.g., setting the table, getting dressed, washing hands), teachers/practitioners use the same response interval for each step; however, some skills may require more time than others to complete (e.g., turning on water takes less time than rubbing soap on hands).

With the *constant time delay* procedure, the response interval is a fixed (constant) number of seconds, usually 3, 4, or 5 seconds. In the 0-second trials, there is only one response interval that is inserted after the controlling prompt. In the delay trials, two response intervals are used: one before the prompt and one after the prompt. To make it easy and predictable, the length of both of the response intervals should be the same (e.g., 3, 4, 5 seconds).

With the *progressive time delay* procedure, the response interval during the 0-second trials is a fixed number of seconds, usually 4, 5, or 6 seconds. This response interval comes after the delivery of the controlling prompt. In the delay trials, two response intervals are used: one before the prompt and one after the prompt. The one before the prompt gradually (progressively) increases across blocks of trials or sessions. The one after the prompt is the same duration as was used in the 0-second trials. The schedule for increasing the response interval before the prompt on delay trials can take a variety of forms. The easiest is to increase it

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by 1 second each session until it gets to the same duration as was used with the 0-second trials (4, 5, 6 seconds).

Step 7. Identifying Activities and Times for Teaching

Both constant and progressive time delay can be used during didactic instruction to teach discrete skills (e.g., answering questions, pointing to numerals) during individual work or small group time. However, these procedures also can be embedded into ongoing activities and routines. Time delay procedures also can be used to teach chained tasks (e.g., putting on coat, washing hands, cooking) that are often taught whenever the skill is needed. The selection of activities and materials is dependent upon the skill(s) the learner needs to acquire. Teachers and other practitioners also should consider using favorite activities or materials during teaching activities to increase motivation. Regardless of whether discrete or chained behaviors are taught, two regular sessions are needed with the simultaneous prompting procedure.

1. Teachers/practitioners identify one regular time during the day when the target skill/behavior can be taught and measured.

Of course, if the skill is going to be taught whenever it is needed, teachers/practitioners identify the times when the skill is needed.

2. Teachers/practitioners identify how many trials will be implemented during instructional activities.

When these procedures are used in individual or small group instruction, five trials per behavior are often sufficient. When embedding time delay procedures within ongoing routines and activities, teachers and other practitioners should implement at least four trials per behavior.

This decision is made by taking into account the learner's characteristics (how readily the learner acquires new skills) and characteristics of the skill (how difficult the skill is). When learners take a long time to learn new skills, use more trials. If the skill is more difficult, use more trials. In general, more than one discrete skill is taught at a time. For example, if the skill is reading words, then at least two words should be taught at once. At least five trials should occur in each instructional session for each skill. Chained skills are generally taught with total task instruction, meaning all steps of the chain are taught simultaneously as the chain should be done.

Implementing Time Delay

Step 1. Establishing Learner Attention, Delivering the Stimulus, and Providing the Cue

1. Teachers/practitioners establish the learner's attention by:

    a. delivering the target stimulus,

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b. using an attention-getting strategy (e.g., saying learner's name, saying, "Look." Having the learner touch the stimulus), and

c. presenting the cue or task direction.

Eye contact is often used as an indication of attention, but other behaviors, such as matching the stimulus, touching it, or repeating the task direction also have been used. Once attention is secured, the teacher/practitioner presents the cue or task direction to let the learner know a behavior is expected from him/her.

EXAMPLE: A teacher says, "David." David looks at the teacher. She presents a flash card with the word "stop" on it (target stimulus) and says, "What is this, David?" while pointing at the flash card.

The teacher behavior used to secure attention, was saying the child's name. The target stimulus is the word "stop." The cue or task direction in this example is the teacher saying, "What is this, David?"

Step 2. Implementing the Time Delay

When first teaching a skill, a fixed 0-second delay is used with both constant and progressive time delay. That is, there is no wait time between the cue and the delivery of the controlling prompt. These sessions are provided for one or two sessions, or until the learner responds with 100% prompted correct responses.

1. After securing attention, presenting the target stimulus, and delivering the cue/task direction, teachers/practitioners <u>immediately deliver</u> the controlling prompt.

In the example used, above, after saying, "David" (to get his attention), showing the word 'stop,' and saying "What is this David?" the teacher would immediately say, "stop" (controlling prompt).

2. If the learner's response is correct (prompted correct), teachers/practitioners immediately provide positive feedback by:

a. offering reinforcement (e.g., praise, access to materials, break) and

b. 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.")

3. If the learner's response is incorrect (prompted error) or if the learner with ASD does not respond, teachers/practitioners ignore the response and go on to the next trial.

With chained skills, when errors (prompted errors) occur, the teacher may have to correct the step before moving on to the next step.

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Step 3. Increasing the Delay

Two different time delay procedures can be used to increase the wait time between the initial cue/task direction and the controlling prompt (i.e., the prompt that the learner will use the target skill/behavior correctly): *constant* and *progressive time delay*. Both procedures are effective in teaching learners with ASD target skills/behaviors. The delay trials are used after a few sessions of the 0-second trials (see Step 2 above). The delay trials involve inserting a response interval after securing the learner's attention, presenting the target stimulus, and delivering the cue/task direction. If learners do not respond at the end of the response interval, teachers/practitioners then deliver a controlling prompt to help learners use target skills/behaviors correctly. These sessions are used for the remainder of instruction until the learner achieves criterion level responding.

With *constant time delay*, teachers/practitioners implement a fixed delay (i.e., 3-5 seconds) after using the 0-second delay over a predetermined number of trials. The delay provides an opportunity for the learner to use the target skill/behavior independently before being offered support from the teacher or practitioner.

1. Teachers/practitioners present the cue to the learner.

2. Teachers/practitioners wait 3 to 5 seconds for the learner to use the target skill/behavior.

3. If the learner's response is correct, teachers/practitioners immediately provide positive feedback by:

    a. offering reinforcement (e.g., praise, access to materials, break) and

    b. 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.")

4. If the learner's response is incorrect (prompted error), teachers/practitioners ignore the response and go on to the next trial.

When errors (prompted errors) occur with chained skills, teachers/practitioners may have to correct the step before moving on to the next step.

5. If the learner does not respond during the response interval, teachers/practitioners:

    a. deliver the controlling prompt and

    b. insert another response interval.

6. If the learner responds correctly after the prompt (prompted correct), teachers/practitioners immediately provide reinforcement.

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

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

With *progressive time delay*, teachers and other practitioners gradually increase the delay (e.g., 1-second intervals) as learners become more proficient at using the target skill/behavior.

1. Teachers/practitioners present the cue to the learner.

2. Teachers/practitioners wait using the increased delay time before prompting the learner to use the skill.

3. If the learner's response is correct, teachers/practitioners immediately provide positive feedback by:

   a. offering reinforcement (e.g., praise, access to materials, break) and

   b. 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.")

4. If the learner's response is incorrect (prompted error), teachers/practitioners ignore the response and go on to the next trial.

When errors (prompted errors) occur with chained skills, teachers/practitioners may have to correct the step before moving on to the next step.

5. If the learner does not respond during the response interval, teachers/practitioners:

   a. deliver the controlling prompt and

   b. insert another response interval.

6. If the learner responds correctly after the prompt (prompted correct), teachers/ practitioners immediately provide reinforcement.

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

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

Step 4. Monitoring Progress

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A key component of time delay procedures is collecting data to monitor a learner's progress. This is accomplished by collecting data during (a) 0-second sessions and (b) the delay-trial sessions. The expected pattern during 0-second sessions is to have 100% prompted correct responses. When the delay trials are used, the percentage of prompted correct responses should decrease and the percentage of unprompted correct responses should increase.

Monitoring learner progress is essential because it allows teachers and other practitioners to modify the wait time as learners become more proficient at using target skills/behaviors. Teachers and other practitioners collect progress monitoring data as the teaching activity is implemented. Often times, teachers and other practitioners place clipboards with data collection sheets at the activity so that they can easily record learner responses.

1. Teachers/practitioners record the number of correct/incorrect learner responses during the teaching activity.

Learner responses are recorded in the following ways (Kurt & Tekin-Iftar, 2008; Schuster, Morse, & Ault, 1998; Wolery, Anthony, & Caldwell, 2002):

- *unprompted correct response* (learner uses the target skill/behavior correctly without prompts within the time delay interval),
- *prompted correct response* (learner uses the target skill/behavior correctly after being prompted),
- *unprompted incorrect response* (learner attempts to use the target skill/behavior without prompts within the time delay interval, but performs it incorrectly),
- *prompted incorrect response* (learner attempts to use the target skill/behavior after being prompted, but performs it incorrectly), and
- *no response* (learner does not initiate use of the target skill/behavior during the time delay interval).

2. Teachers/practitioners review progress monitoring data after two teaching activities to determine a learner's mastery of the target skill/behavior.

Generally, teachers and other practitioners review data after two teaching activities have been implemented. This way, the wait time can be increased quite quickly to ensure rapid acquisition of skills on the part of the learner. Learners should demonstrate 100% correct responding *before a prompt* over two consecutive teaching activities before increasing the wait time. If 25% of a learner's responses are *wrong after the prompt* after two teaching sessions, a more controlling prompt may be needed. A *no response* on 25% or more trials after two teaching sessions often indicates that the reinforcer is not motivating enough for the learner with ASD. The following table provides a sample data collection sheet that can be used to monitor a learner's progress on the target skill/behavior. Optimally, teachers/practitioners collect data before time delay is implemented, during the intervention, and after learners have acquired target skills/behaviors to evaluate generalization and maintenance. During baseline and after the intervention is complete, teachers/practitioners record learners' use of target skills/behaviors in the "After prompt" column only.

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Sample Time Delay Data Collection Sheet

Target Skill/Behavior: Saying "Stop" when presented with a flashcard with the word "stop" on it.					
Date: 8/12/08	Delay: 3-second		Date: 8/13/08	Delay: 3-second	
Trial #	Before prompt	After prompt	Trial #	Before prompt	After prompt
1	+		1	-	
2		-	2	+	
3	+		3	+	
4		-	4	+	

3. Teachers/practitioners gradually increase the time delay (e.g., 1-second intervals) as learners demonstrate 100% mastery of the target skill over the course of two instructional activities.

After the learner has demonstrated 100% mastery of the target skill using the increased delay, teachers/practitioners continue to gradually increase the delay. When teachers and other practitioners reach a 5-6 second delay, then they should continue teaching the target skill using this time interval until the learner masters the target skill. The goal is to entirely stop using the time delay and prompting procedures so that learners are use target skills independently.

References

Kurt, O., & Tekin-Iftar, E. (2008). A comparison of constant time delay and simultaneous prompting within embedded instruction on teaching leisure skills to children with autism. *Topics in Early Childhood Special Education, 28*(1), 53-64.

Schuster, J. W., Morse, T. E., & Ault, M. J. (1998). Constant time delay with chained tasks: a review of the literature. *Education and Treatment of Children, 21*(1), 74-106.

Wolery, M., Anthony, L., & Caldwell, N. K. (2002). Embedding and distributing constant time delay in circle time and transitions. *Topics in Early Childhood Special Education, 22*(1), 14-25.