

MODULE: TIME DELAY

STEP-BY-STEP INSTRUCTIONS

Phase I: Preparing for the Intervention

Step 1. Identifying Target Skill(s)

In Step 1, teachers, practitioners, other team members, and families confer and review IFSP/IEP goals to identify target skill(s) that learner(s) with ASD need to develop.

1. Team members identify a behavior or skill that will serve as the focus of the intervention.

Many times, team members select priority goals from a learner's IFSP/IEP to serve as the target skills during the intervention. Target skills should be based upon individual learner needs. Examples of skills that might be taught using a time delay procedure include:

- *language/communication* (requesting, responding, greeting, seeking information),
- *academic* (multiplication facts, sight word reading, letter identification, number identification), and
- *social skills/play* (greeting adults/peers, exchanging materials).

2. Team members define learner response behaviors.

Before implementing time delay procedures, team members define learner response behaviors so that they can determine a correct or incorrect response during the teaching activities. For example, if a target skill for a learner with ASD is to request, then the team member must determine what is to be considered a request. 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. Through this process, team members can determine a learner's current ability to use them 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.

MODULE: TIME DELAY

1. Team members assess a learner's current skills by directly observing the learner during daily routines and activities.

The following table illustrates how team members can assess a learner's current skills using anecdotal notes.

MODULE: TIME DELAY

| 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, team members can then determine whether or not the learner has the prerequisite skills needed to participate in the learning activity. Some of the skills, however, 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., respond to instructional cues, imitate others, increase positive behaviors, follow one-step instructions) provide team members 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 helps team members determine which types of cues (e.g., direct instructions, environmental arrangement, written instructions) are successful with individual learners.

2. Team members determine a learner's current ability to:
 - a. *respond to instructional cues*. Learners with ASD must look in the direction of the team member 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, team members provide a cue, wait for the learner to respond, and then provide a prompt to teach the target skill. For example, if the target skill is requesting, then the learner must be able to imitate the phrase, "More, please," after the teacher models it for him.

MODULE: TIME DELAY

- 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.
- 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 Activities

Time delay procedures can be used during more didactic approaches to learning in which instruction takes place during individual work time or small group activities. Time delay procedures also can be embedded within ongoing routines and activities. For example, a parent could work on “requesting help” using time delay when their child is getting his coat on to go to school in the morning.. The selection of activities and materials is entirely dependent upon the skill(s) that a learner or small group of learners need to acquire. Team members also should consider using favorite activities or materials during teaching activities to increase motivation.

1. Team members identify one of the following activities as a time to implement a time delay procedure and teach target skill(s):
 - a. *individual work* (seat work, working with teacher during free play, coloring at the kitchen table),
 - b. *small group activities* (centers, circle time, peer-mediated instructional activities, group project, play group at the parents house), or
 - c. *embedded instruction within ongoing routines and activities at home or at school* (putting coat on to go home, requesting snack, requesting help to turn on computer, greeting others).

Step 4. Selecting Cues

In Step 4, team members must identify the cue that will signal the learner to perform the target skill. A cue basically tells the learner that it is time to use the target skill. Identification of a relevant cue is a critical part of the implementation process because it

MODULE: TIME DELAY

provides a way for the learner to associate the cue with using the target skill rather than becoming dependent upon the teacher's prompts. For example, if a teacher does not select and use a cue during a teaching activity, learners with ASD will not know what is expected of them and will rely upon the teacher's prompts to use the skill. Depending upon the target skill and activity, the teacher, peers, or natural environment may cue the learner to use the skill.

1. Team members select at least one of the following cues to begin the teaching activity:
 - a. *arranging the environment* (getting the materials set up and ready before the learner comes to the activity such as setting up tasks for individual work time, setting the table before snack or a meal, placing playdough and toys on the table, arranging desks for small group work); and/or
 - b. *providing instructions about the task or activity* (telling learner to get his coat on to go home, giving a picture card to go wash hands, ringing a bell for learner to go to next class, presenting a flashcard with a sight word on it).

Instructions should be clear, complete, specific, and aimed at learners' skill and interest levels. For example, a teacher would not use picture cards with a learner who is able to follow verbal instructions. It is essential that the cue be clear enough that learners with ASD know what they are supposed to be doing during the particular task or activity.

Step 5. Selecting the Controlling Prompt

When learning a new skill, a learner with ASD initially will need assistance in using it. Therefore, team members use prompting procedures in conjunction with time delay to teach learners with ASD target skills. For example, if the learner with ASD is presented with a cue and does not respond then the team member would provide the controlling prompt to teach the learner how to use the skill.

1. Team members select one of the following prompting types as the controlling prompt:
 - a. *verbal*. Statements that team members make that help learners acquire a particular skill (e.g., "Maybe you should try it a different way.");
 - b. *gestural*. Movements made by team members that cue learners to engage in behaviors (e.g., pointing, raising hands up and shrugging shoulders as if to say, "What do you need?");
 - c. *model*. Team members perform the behavior that the learner is learning to do. Model prompts can be (1) verbal (e.g., "Milk, please," "Help, please," "Two

MODULE: TIME DELAY

- times two is four”) or (2) motor (e.g., having learner watch parent tie her shoes, teacher opens a jar, teacher zips up coat);
- d. *physical*. Adults touch learners and help them engage in the target skill (e.g., teacher touches learner’s hand to prompt him to write his name, teacher puts her hand over the learner’s hand to demonstrate how to zip up his coat); and/or
 - e. *positional*. With positional prompting, materials are arranged so that the correct item is in a position that is apparent to the learner with ASD. For example, if the task is to pick out the number “2” from five different cards with numbers on them, then team members might initially arrange the cards so that the correct number is directly in front of the learner. As the learner acquires the skill, the other cards can be gradually moved closer to the learner until they are even with the correct choice.

Prompting ranges in intensity from least to most restrictive. For example, tapping the top of the paper to prompt a learner to write his name is less restrictive than saying, “Write your name.” Team members should always select the least restrictive prompt needed by the learner to use the target skills successfully as the controlling prompt. The following table illustrates how prompting procedures can be used to provide the least and most support to learners with ASD. **Please refer to *Prompting: Steps for Implementation* (National Professional Development Center on ASD, 2008) for more information about prompting.**

MODULE: TIME DELAY

| Least | | | | | Most |
|--|---|---|---|--|------|
| 1 | 2 | 3 | 4 | 5 | |
| <i>Positional</i> (e.g., highlighting the correct answer on a worksheet) | <i>Gestural</i> (e.g., teacher points to the top of the page where the learner is supposed to write his/her name) | <i>Partial model</i> (e.g., when teaching instruction “Write name,” teacher mimics writing, but does not actually write) <i>Partial verbal model</i> (e.g., when teaching the label “pencil,” the parent says, “What is it? Say p____.”) | <i>Partial physical</i> (e.g., gently touching a learner’s hand) <i>Full model</i> (e.g., when teaching instruction “Write name,” teacher writes name while telling learner to write name) | <i>Full physical</i> (i.e., hand-over-hand) <i>Full verbal model</i> (e.g., when teaching the label “pencil,” parent says, “What is it? Say pencil.”) | |

Step 6. Designing Data Collection Procedures

In Step 6, team members design data collection procedures that will be a critical component of the implementation process. When designing procedures, team members identify criterion for increasing the time delay. It is generally recommended that teachers conduct at least two trials using a 0-second delay before increasing the wait time.

1. Team members determine how many 0-second delay trials will be implemented before increasing the time delay.
2. Team members create a data collection sheet to record learner responses during the teaching activity (see example data collection sheet in Step 7).

Step 7. Collecting Baseline Data

Before implementing a teaching activity that uses time delay as the primary means of instruction, team members collect baseline data to determine the learner’s current use of the target skill. This is accomplished by implementing a teaching activity using the predetermined cue; however, no feedback is provided to the learner. All learner responses are recorded in the *After Prompt* column of the data collection sheet.

1. Team members present the cue to begin the teaching activity.
2. Team members wait 3 to 5 seconds for the learner to respond.

MODULE: TIME DELAY

Learner responses are recorded in the following ways:

- *unprompted correct response* (learner uses the target skill correctly within 3-5 seconds of the cue being presented),
 - *unprompted incorrect response* (learner attempts to use the target skill within 3-5 seconds of the cue being presented, but performs it incorrectly), and
 - *no response* (learner does not initiate use of the target skill within 3-5 seconds of the cue being presented) (Kurt & Tekin-lftar, 2008; Wolery, Anthony, Caldwell, Snyder, & Morgante, 2002; Schuster et al., 1998).
3. If no response is given or if the response is incorrect, team members put a - in the *After prompt* column.
 4. If the learner does *not* use the target skill correctly, team members do not provide the correct response.
 5. If a correct response is given, team members put a + in the *After prompt* column.
 6. Team members collect baseline data for at least 10 trials (i.e., cue, learner response).

The following table provides an example data collection sheet that can be used to collect baseline data.

Example Baseline Time Delay Data Collection Sheet

| | | | | | |
|---|-----------------|--------------|------------------|-----------------|--------------|
| Target skill: Saying "Stop" when presented with a flashcard with the word "stop" on it. | | | | | |
| Date: 8/12/08 | Delay: 0-second | | Date: 8/12/08 | Delay: 0-second | |
| Trial # | Before prompt | After prompt | Trial # | Before prompt | After prompt |
| 1 | | - | 1 | | - |
| 2 | | - | 2 | | - |
| 3 | | - | 3 | | - |

These data provide an initial baseline from which team members can evaluate the learner's use of the target skill as well as the effectiveness of the intervention.

Phase II: Implementing Time Delay

Step 1. Gaining Learner Attention

1. Team members gain the learner's attention by:

MODULE: TIME DELAY

- a. using an attention-getting strategy (e.g., saying learner's name, saying, "Look") and
- b. presenting the cue.

Once eye contact has been established with the learner, then team members can present the cue to begin the teaching activity.

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

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.

1. Team members use a 0-second delay by providing the learner with the cue to use the target skill followed immediately by the controlling prompt.
2. Team members use the least restrictive prompt needed for the learner to use the skill.

EXAMPLE: After the teacher in the above example, says "What is this, David?" she immediately says, "Stop." The teacher continues to use the 0-second time delay 10 more times before increasing the delay between the cue and the prompt.

After the 0-second delay is implemented over a predetermined number of trials, the delay is increased based upon the time delay procedure being used (see Step 3 below).

MODULE: TIME DELAY

Step 3. Increasing the Delay

Two different time delay procedures can be used to increase the wait time between the initial cue and the controlling prompt: constant and progressive time delay. Both procedures are effective in teaching learners with ASD target skills.

With *constant time delay*, team members 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 independently before being offered support from the team member.

1. Team members present the cue to the learner.
2. Team members wait 3 to 5 seconds for the learner to use the target skill.
3. If the learner's response is correct, team members 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 or if the learner does not respond to the cue, team members:
 - a. provide the cue again,
 - b. wait 3 to 5 seconds, and
 - c. use the controlling prompt to help the learner use the target skill.

With *progressive time delay*, team members gradually increase the delay (e.g., 1-second intervals) as learners become more proficient at using the target skill.

1. Team members present the cue to the learner.
2. Team members wait using the increased delay time before prompting the learner to use the skill.
3. If the learner's response is correct, team members immediately provide positive feedback by:
 - a. offering reinforcement (e.g., praise, access to materials, break) and

MODULE: TIME DELAY

- 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 or if the learner does not respond to the cue, team members:
 - a. provide the cue again,
 - b. wait for the increased time interval (e.g., 1-second, 2-seconds), and
 - c. use the controlling prompt to help the learner use the target skill.

Step 4. Monitoring Progress

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

1. Team members record the number of correct/incorrect learner responses during the teaching activity.

Learner responses are recorded in the following ways:

- *unprompted correct response* (learner uses the target skill correctly without prompts within the time delay interval),
 - *prompted correct response* (learner uses the target skill correctly after being prompted),
 - *unprompted incorrect response* (learner attempts to use the target skill without prompts within the time delay interval, but performs it incorrectly),
 - *prompted incorrect response* (learner attempts to use the target skill after being prompted, but performs it incorrectly), and
 - *no response* (learner does not initiate use of the target skill during the time delay interval) (Kurt & Tekin-Iftar, 2008; Wolery et al., 2002; Schuster et al., 1998).
2. Team members review progress monitoring data after two teaching activities to determine a learner’s mastery of the target skill.

Generally, team members 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%

MODULE: TIME DELAY

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. Below is the same data collection sheet that was used during baseline; however, it contains data from a teaching activity that used a 3-second delay during two teaching activities.

Example Time Delay Data Collection Sheet

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

3. Team members 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, team members continue to gradually increase the delay. When team members 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 use target skills independently.