AFIRM

Autism Focused Intervention Resources & Modules

TD

EBP Brief Packet: Time Delay

UNC Frank Porter Graham Child Development Institute
Autism Focused Intervention Resources & Modules
Sam, A., & AFIRM Team, Updated 2024

The National Professional Development Center on Autism

The National Clearinghouse on Autism Evidence & Practice
NCAEP • BRIDGING PRACTICE AND SCIENCE

UNC FRANK PORTER GRAHAM CHILD DEVELOPMENT INSTITUTE

Overview of Content

1. **Table of TD Contents:** This list details the specific TD resources that apply to Time Delay.
2. **What is TD:** A quick summary of salient features of Time Delay, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
3. **Evidence-base:** The evidence-base details the National Clearinghouse on Autism Evidence and Practice (NCAEP) criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for Time Delay.
4. **Planning Checklist:** This checklist details the steps for planning for Time Delay, including what prerequisite learning of practices are needed, collecting baseline data of the interfering behavior if needed, and what materials/resources are needed.
5. **Other Resources:** Other resources may include decision trees, checklists, and/or template forms that will support the use of Time Delay.
6. **Step-by-Step Guide:** Use this guide as an outline for how to plan for, use, and monitor Time Delay. Each step includes a brief description as a helpful reminder while learning the process.
7. **Implementation Checklist:** Use this checklist to determine if Time Delay are being implemented as intended.
8. **Monitoring Progress Checklist:** Use this form as a method for collecting and analyzing data to determine if the learner on the spectrum is making progress towards the interfering behavior.
9. **Tip Sheet for Professionals:** Use this tip sheet, intended for professionals working with learners on the spectrum, as a supplemental resource to help provide basic information about Time Delay.
10. **Parent Guide:** Use this guide intended for parents or family members of learners on the spectrum to help them understand basic information about Time Delay and how it is being used with their child.
11. **Additional Resources:** This list provides additional information for learning more about Time Delay as well as resources.
12. **CEC Standards:** This list details the specific CEC standards that apply to Time Delay.
13. **Glossary:** This glossary contains key terms that apply specifically to Time Delay.
14. **References:** This list details the specific references used for developing this TD module in numerical order.

Table of Contents

Time Delay

WHAT IS TD?

Learners with on the spectrum often struggle with generalizing target skills and behaviors. Learners may become dependent on prompts from adults and/or peers to use a target skill or behavior.[1-2] Time delay can be used to prevent dependence on prompts.[2]

Time delay is a response prompting procedure that systematically fades prompts during instructional activities.[2] Time delay is a foundational practice that is used with other evidence-based practices (prompting and reinforcement). When using time delay, adults provide a controlling prompt (prompt which ensures learner will use the target skill) before learner responds, which reduces errors and increases reinforcement opportunities.[3-6]

EVIDENCE-BASE:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Time Delay is a foundational intervention that meets the evidence-based practice criteria with 31 single case design studies. Time Delay has been effective for early intervention (0-2 years), preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), high schoolers (15-18 years), and young adults (19-22 years) on the spectrum. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how Time Delay can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, cognitive, communication, joint attention, motor, play, school readiness, social, and vocational.

HOW IS TD BEING USED?

Time Delay can be used by a variety of professionals, including teachers, special educators, therapists, paraprofessionals, and early interventionists in educational and community-based environments. Parents and family members also can use Time Delay in the home.

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EVIDENCE-BASE

The National Clearinghouse on Autism Evidence and Practice has adopted the following criteria to determine if a practice is evidence-based. The 2020 EBP report (Steinbrenner et al., 2020) provides more information about the systematic review process.

Efficacy must be established through high-quality, peer-reviewed research in scientific journals using:

- At least 2 randomized or quasi-experimental group design studies, or
- At least 5 single subject/case design studies, or a
- Combination of evidence of 1 randomized or quasi-experimental group design study and 3 single subject/case design studies

OVERVIEW:

Based upon the 2020 systematic review conducted by the National Clearinghouse on Autism Evidence and Practice (NCAEP), Time Delay is a foundational intervention that meets the evidence-based practice criteria with 31 single case design studies. Time Delay has been effective for early intervention (0-2 years), preschoolers (3-5 years), elementary school learners (6-11 years), middle school learners (12-14 years), high schoolers (15-18 years), and young adults (19-22 years) on the spectrum. Studies included the 2020 EBP report (Steinbrenner et al., 2020) detail how Time Delay can be used to effectively address the following outcomes for a target goal/behavior/skill: academic/pre-academic, adaptive/self-help, behavior, cognitive, communication, joint attention, motor, play, school readiness, social, and vocational.

In the table below, the instructional outcomes identified by the evidence base are shown by age of participants.

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Joint Attention	Motor	Play	School readiness	Social	Vocational
0-2						Yes				Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
12-14	Yes	Yes			Yes					Yes	Yes
15-18		Yes							Yes		Yes
19-22	Yes	Yes			Yes				Yes		Yes

EARLY INTERVENTION (0-2 YEARS):

Krstovska-Guerrero, I., & Jones, E. A. (2016). Social-communication intervention for toddlers with Autism Spectrum Disorder: Eye gaze in the context of requesting and joint attention. *Journal of Developmental and Physical Disabilities, 28(2)*, 289-316. https://doi.org/10.1007/s10882-015-9466-9

Muzammal, M. S., & Jones, E. A. (2016). Social-communication intervention for toddlers with autism spectrum disorder: Effects on initiating joint attention and interactions with mother. *Journal of Developmental and Physical Disabilities, 29*, 203-221. https://doi.org/10.1007/s10882-016-9519-8

PRESCHOOL (3-5 YEARS):

***Akmanoglu, N., Kurt, O., & Kapan, A. (2015). Comparison of simultaneous prompting and constant time delay procedures in teaching children with autism the responses to questions about personal information. *Educational Sciences: Theory and Practice, 15*(3), 723-737.** https://doi.org/10.12738/estp.2015.3.2654

*Ingvarsson, E. T., & Hollobaugh, T. (2010). Acquisition of intraverbal behavior: Teaching children with autism to mand for answers to questions. *Journal of Applied Behavior Analysis, 43*(1), 43847. https://doi.org/10.1901/jaba.2010.43-1

*Leung, J. P. (1994). Teaching spontaneous requests to children with autism using a time delay procedure with multi-component toys. *Journal of Behavioral Education, 4*(1), 21-31. https://doi.org/10.1007/BF01560506

Lorah, E., Tincani, M., Dodge, J., Gilroy, S., Hickey, A., & Hantula, D. (2013). Evaluating picture exchange and the iPad as a speech generating device to teach communication to young children with Autism. Journal of Developmental & Physical Disabilities, 25(6), 637-649. https://doi.org/10.1007/s10882-013-9337-1

Reichow, B., & Wolery, M. (2011). Comparison of progressive prompt delay with and without instructive feedback. *Journal of Applied Behavior Analysis, 44*(2), 327-340. https://doi.org/10.1901/jaba.2011.44-327

Rogers, L., Hemmeter, M. L., & Wolery, M. (2010). Using a constant time delay procedure to teach foundational swimming skills to children with autism. *Topics in Early Childhood Special Education, 30*(2), 102-111. https://doi.org/10.1177/0271121410369708

*Schrandt, J. A., Townsend, D. B., & Poulson, C. L. (2009). Teaching empathy skills to children with autism. *Journal of Applied Behavior Analysis, 42*(1), 17-32. https://doi.org/10.1901/jaba.2009.42-17

Silbaugh, B. C., Falcomata, T. S., & Ferguson, R. H. (2018). Effects of a lag schedule of reinforcement with progressive time delay on topographical mand variability in children with autism. *Developmental Neurorehabilitation, 21*(3), 166-177. https://doi.org/10.1080/17518423.2017.1369190

*Taylor, B. A., & Harris, S. L. (1995). Teaching children with autism to seek information: Acquisition of novel information and generalization of responding. *Journal of Applied Behavior Analysis, 28*(1), 3-14. https://doi.org/10.1901/jaba.1995.28-3

Venn, M. L., Wolery, M., Werts, M. G., Morris, A., DeCesare, L. D., & Cuffs, M. S. (1993). Embedding instruction in art activities to teach preschoolers with disabilities to imitate their peers. *Early Childhood Research Quarterly, 8*(3), 277-294. https://doi.org/10.1016/S0885-2006(05)80068-7

ELEMENTARY SCHOOL (6-11 YEARS):

***Akmanoglu, N., Kurt, O., & Kapan, A. (2015). Comparison of simultaneous prompting and constant time delay procedures in teaching children with autism the responses to questions about personal information. *Educational Sciences: Theory and Practice, 15*(3), 723-737. https://doi.org/10.12738/estp.2015.3.2654**

Alison, C., Root, J. R., Browder, D. M., & Wood, L. (2017). Technology-based shared story reading for students with autism who are English-language learners. *Journal of Special Education Technology, 32*(2), 91-101. https://doi.org/10.1177/0162643417690606

Browder, D. M., Root, J. R., Wood, L., & Allison, C. (2017). Effects of a story-mapping procedure using the iPad on the comprehension of narrative texts by students with autism spectrum disorder. *Focus on Autism Other Developmental Disabilities, 32*(4), 243-255. https://doi.org/10.1177/1088357615611387

***Carlile, K. A., Reeve, S. A., Reeve, K. F., & DeBar, R. M. (2013). Using activity schedules on the iPod touch to teach leisure skills to children with autism. *Education & Treatment of Children, 36*(2), 33-57. https://doi.org/10.1353/etc.2013.0015**

Cihak, D. F. (2007). Teaching students with autism to read pictures. *Research in Autism Spectrum Disorders, 1*(4), 318-329. https://doi.org/10.1016/j.rasd.2006.12.002

Ingenmey, R., & Houten, R. (1991). Using time delay to promote spontaneous speech in an autistic child. *Journal of Applied Behavior Analysis, 24*(3), 24-591. https://doi.org/10.1901/jaba.1991.24-591

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Jimenez, B. A., & Kemmery, M. (2013). Building the early numeracy skills of students with moderate intellectual disability. *Education and Training in Autism and Developmental Disabilities, 48*(4), 479-490.

Kodak, T., Fisher, W. W., Clements, A., & Bouxsein, K. J. (2011). Effects of computer-assisted instruction on correct responding and procedural integrity during early intensive behavioral intervention. *Research in Autism Spectrum Disorders, 5*(1), 640-647. https://doi.org/10.1016/j.rasd.2010.07.011

*Leung, J. P. (1994). Teaching spontaneous requests to children with autism using a time delay procedure with multi-component toys. *Journal of Behavioral Education, 4*(1), 21-31. https://doi.org/10.1007/BF01560506

Leung, J. P., & Chan, O. T. (1993). Teaching spontaneous verbal requests to Chinese children with autism using a time delay procedure. *Bulletin of the Hong Kong Psychological Society*, 30-31, 47–58.

Liber, D. B., Frea, W. D., & Symon, J. B. (2008). Using time-delay to improve social play skills with peers for children with autism. *Journal of Autism and Developmental Disorders, 38*(2), 312-323. https://doi.org/10.1007/s10803-007-0395-z

Matson, J. L., Sevin, J. A., Fridley, D., & Love, S. R. (1990). Increasing spontaneous language in three autistic children. *Journal of Applied Behavior Analysis, 23*(2), 227-233. https://doi.org/10.1901/jaba.1990.23-227

*Schrandt, J. A., Townsend, D. B., & Poulson, C. L. (2009). Teaching empathy skills to children with autism. *Journal of Applied Behavior Analysis, 42*(1), 17-32. https://doi.org/10.1901/jaba.2009.42-17

Shepley, C., Lane, J. D., & Gast, D. L. (2016). Using SMART board technology to teach young students with disabilities and limited group learning experience to read environmental text. *Education and Training in Autism and Developmental Disabilities, 51*(4), 404-420.

Spooner, F., Kemp-Inman, A., Ahlgrim-Delzell, L., Wood, L., & Davis, L. L. (2015). Generalization of literacy skills through portable technology for students with severe disabilities. *Research and Practice for Persons with Severe Disabilities, 40*(1), 52-70. https://doi.org/10.1177/1540796915586190

Swain, R., Lane, J. D., & Gast, D. L. (2015). Comparison of constant time delay and simultaneous prompting procedures: Teaching functional sight words to students with intellectual disabilities and autism spectrum disorder. *Journal of Behavioral Education, 24*(2), 210-229. https://doi.org/10.1007/s10864-014-9209-5

*Taylor, B. A., & Harris, S. L. (1995). Teaching children with autism to seek information: Acquisition of novel information and generalization of responding. *Journal of Applied Behavior Analysis, 28*(1), 3-14. https://doi.org/10.1901/jaba.1995.28-3

MIDDLE SCHOOL (12-14 YEARS):

***Carlile, K. A., Reeve, S. A., Reeve, K. F., & DeBar, R. M. (2013). Using activity schedules on the iPod touch to teach leisure skills to children with autism. *Education & Treatment of Children, 36*(2), 33-57. https://doi.org/10.1353/etc.2013.0015**

Collins, B. C., Hager, K. L., & Galloway, C. C. (2011). Addition of functional content during core content instruction with students with moderate disabilities. *Education and Training in Autism and Developmental Disabilities, 46*(1), 22-39.

Dotto-Fojut, K. M., Reeve, K. F., Townsend, D. B., & Progar, P. R. (2011). Teaching adolescents with autism to describe a problem and request assistance during simulated vocational tasks. *Research in Autism Spectrum Disorders, 5*(2), 826-833. https://doi.org/10.1016/j.rasd.2010.09.012

HIGH SCHOOL (15-18 YEARS):

***Smith, K. A., Ayres, K. A., Alexander, J., Ledford, J. R., Shepley, C., & Shepley, S. B. (2016). Initiation and generalization of self-instructional skills in adolescents with autism and intellectual disability. *Journal of Autism and Developmental Disorders, 46*(4), 1196-1209. https://doi.org/10.1007/s10803-015-2654-8**

YOUNG ADULTS (19-22 YEARS):

Hua, Y., Woods-Groves, S., Kaldenberg, E. R., & Scheidecker, B. J. (2013). Effects of vocabulary instruction using constant time delay on expository reading of young adults with intellectual disability. *Focus on Autism and Other Developmental Disabilities, 28*(2), 89-100. https://doi.org/10.1177/1088357613477473

Miller, C., Collins, B. C., & Hemmeter, M. L. (2002). Using a naturalistic time delay procedure to teach nonverbal adolescents with moderate-to-severe mental disabilities to initiate manual signs. *Journal of Developmental and Physical Disabilities*, *14*(3), 247-261. https://doi.org/10.1023/A:1016072321661

Saadatzi, M. N., Pennington, R. C., Welch, K. C., Graham, J. H., & Scott, R. E. (2017). The use of an autonomous pedagogical agent and automatic speech recognition for teaching sight words to students with autism spectrum disorder. *Journal of Special Education Technology, 32*(3), 173-183. https://doi.org/10.1177/0162643417715751

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Notes: * denotes the study has participants in at least two age ranges
Bold denotes new studies since 2011 (2012 till 2017)

Time Delay Procedures

CONSTANT TIME DELAY (CTD):

When beginning to teach a target skill/behavior using CTD, provide a 0-second delay (no delay) between the cue and prompt. Model prompts are the most common prompt type to use with this procedure.[7] After a minimum of two trials using the 0-second delay, adults use a fixed amount of time between the cue and the controlling prompt (typically 3-5 seconds). This delay allows learners to acquire a new skill without becoming prompt dependent.[8-9]

PROGRESSIVE TIME DELAY (PTD):

Like CTD, adults use a 0-second delay when first teaching a target skill/behavior. Then, adults gradually increase the wait time rather than using a fixed time interval. The delay is usually increased to a 5 second interval but can be as much as 10 seconds.

COMPONENTS OF BOTH TIME DELAY PROCEDURES:

Antecedent - A cue that tells learner to use the target skill

Target skill – Learner response

Consequence - Feedback/reinforcement provided by teachers and practitioners

PRE-ASSESSMENT

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet to take notes on the learner's behavior to determine if they have prerequisite skills needed for time delay.

Time	Activity	Behavior

Reinforcer Sampling & Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Goal/Behavior/Skill: _____
Directions: Use this worksheet and checklist to identify and select reinforcers/rewards based on the learner's preferred items, interests, and activities for **Positive Reinforcement** and **Token Economy**.

CONDUCT A REINFORCER SAMPLING:

1. Sit in front of the learner and hold up two items. Ask the learner to "Pick one."
2. Wait 10 seconds for the learner to indicate selection in manner that is appropriate for the learner (e.g., verbalization, pointing, using an augmentative communication device).
3. Place the selected object in a container for learner's selection and non-selected item in the not selected container.
4. Repeat steps 1 through 3 until half of the objects presented are selected.

Item 1	Selected?	Item 2	Selected?
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No
	Yes No		Yes No

LIST SELECTED REINFORCERS:

LIST POTENTIAL REINFORCERS:

AGE APPROPRIATE?

1. What natural reinforcers could be used?

   Yes No

2. What activities, objects, and/or foods does the learner select independently?

   Yes No

3. What phrases or gestures seem to produce a pleasant response from the learner?

   Yes No

4. What does the learner say they would like to work for (if appropriate)?

   Yes No

5. What reinforcers were identified by parents/family members and/or team members as being successful in the past?

   Yes No

6. Does the learner require additional adaptations/ modifications/supports? Such as visual supports or a communication device?

   Yes No

7. Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?

   Yes No

8. Are additional materials and/or resources for using Functional Behavior Assessment ready and available?

   Yes No

FOODS FOR SNACKS/MEALTIME ROUTINES:

- ❑ Cheese
- ❑ Chicken Nuggets
- ❑ Chips
- ❑ French Fries
- ❑ Fruit
- ❑ Goldfish
- ❑ Ice Cream
- ❑ Pizza
- ❑ Pretzels
- ❑ Other:
- ❑ Other:
- ❑ Other:

GAMES FOR PLAY/RECESS ROUTINES:

- ❑ Burrito games with a blanket
- ❑ Chase
- ❑ Pat-a-Cake
- ❑ Peek-a-Boo
- ❑ Tickles
- ❑ Other:
- ❑ Other:
- ❑ Other:
- ❑ Other:

TOYS FOR PLAY/RECESS ROUTINES:

- ❑ Books
- ❑ Cars/Trains/Trucks
- ❑ Computer
- ❑ Doll house
- ❑ Legos
- ❑ Noisy toys
- ❑ Phones
- ❑ Puzzles
- ❑ Remote controlled toys
- ❑ Other:
- ❑ Other:
- ❑ Other:

SPECIAL INTERESTS FOR ACTIVITIES/ROUTINES:

- ❑ Book Character:
- ❑ Book:
- ❑ Cars, Trains, Trucks
- ❑ Computers/Technology
- ❑ Dinosaurs
- ❑ Letters
- ❑ Movie Character:
- ❑ Movie:
- ❑ Music
- ❑ Numbers
- ❑ Real-Life Person:
- ❑ TV Show Character:
- ❑ TV Show:
- ❑ Video Game:
- ❑ Other:
- ❑ Other:
- ❑ Other:

Prompting Hierarchy

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Interfering Behavior: _____
Directions: Use this checklist to determine order of prompts based on the learner's needs and the target skill.

PROMPTS:

- **Gestural** – a physical movement that provides the learner with information about how to perform the target skill/behavior
- **Independent** – the learner can perform the target skill/behavior without assistance or support from others
- **Model** – demonstrating the correct way to perform the target skill/behavior for the learner
- **Physical** – hands-on assistance given to the learner to support them to perform the target skill/behavior
- **Verbal** – any spoken words direct to the learner to help them perform the target skill/behavior
- **Visual** – a picture, icon, or physical object used to provide the learner with information on how to perform the target skill/behavior

Level	Prompt	Instructions
Level 1	Independent	
Level 2		
Level 3		
Level 4		
Level 5		
Level 6		

Planning Checklist

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine which type of visual support to use with the learner on the spectrum as well as if TD is ready to be implemented.

ASSESS THE LEARNER'S CURRENT ABILITIES:

- ❑ **Responding to instructional cues:** When a cue or attention-getting strategy is used, is the learner able to look in the appropriate direction (at adult)?
- ❑ **Wait:** Is the learner able to wait for approximately four seconds for a prompt if s/he is not certain of the correct response?
- ❑ **Imitate others:** Is the learner able to imitate others when a model is provided?
- ❑ **Stay seated:** Is the learner able to stay at an activity for 5 to 10 minutes?
- ❑ **Reinforcement:** Does the learner have a history of using behaviors more frequently after appropriate reinforcers have been provided?
- ❑ **Follow one-step instructions:** Is the learner able to follow simple, one-step instructions?

If you DID NOT check off any of these questions, time delay MIGHT NOT be helpful to use with the learner.

DEFINE THE CUE:

1. What is the cue that will signal to the learner to perform the target skill?

2. Is the cue...
   - ❑ Naturally Occurring Event
   - ❑ Material or environmental manipulation
   - ❑ Task direction

IDENTIFY THE CONTROLLING PROMPT:

Controlling prompt is the words and/or actions said/used to ensure that the learner will perform the target skill successfully. It can be a gestural, verbal, visual, model, or physical prompt.

Try out different prompts to see which ones are successful in getting the learner to complete the task consistently.

Prompt	Description	Level of Success
Gestural		
Model		
Physical		
Verbal		
Visual		

Selected controlling prompt:

IDENTIFY TIMES & ACTIVITIES TO USE TIME DELAY:

Prompt	Possible Opportunities
Individual work	
Small Group	
Embedded instruction	

SELECT TIME DELAY PROCEDURE & RESPONSE INTERVAL:

Procedure:

- ❑ Constant time delay
- ❑ Progressive time delay

Response Interval:

- ❑ 0
- ❑ 1
- ❑ 2
- ❑ 3
- ❑ Other:

PLANNING:

- ❑ Has the target goal/behavior/skill been identified?
- ❑ Has baseline data and/or a functional behavior assessment been collected through direct observation of the learner?
- ❑ Is the target goal/behavior/skill measurable and observable? Does it clearly state **what** the target goal/behavior/skill is, **when** it will occur, and **how** team members/observers will know it has been mastered?
- ❑ Is Time Delay appropriate for the learner's target goal/behavior/skill?
- ❑ Does the learner have needed prerequisite skills/abilities?
- ❑ Does the learner require additional adaptations/modifications/supports? Such as a communication device?
- ❑ Have reinforcers/rewards for the learner been identified based on the learner's interests/preferred items and/or activities?
- ❑ Are additional materials and/or resources for using Time Delay ready and available?

Time Delay Decision Tree

1. Follow these steps until the student responds with 100% accuracy for 2 consecutive trials.

Target Cue: Words and/or actions that signal the learner to perform the target skill/behavior

Give the target cue to the student _____

Time Delay

Wait 0-seconds for the student to use the skill

Controlling Prompt: Words and/or actions that ensures the learner performs the target skill/behavior

Give the controlling prompt _____

Student Response

The student responds correctly

Your Response

Give the student reinforcement and state what the learner did correctly

Follow these steps after the student responds with 100% accuracy for 2 consecutive trials.

Constant time delay: Wait time should be the same for each trial (generally 3, 4, or 5 seconds)

Progressive time delay: Gradually increase wait time (add 1 or 2 seconds) for subsequent trials based on data and the student's responses

Target Cue
- Give the target cue to the student _____

Time Delay
- Wait ____ seconds for the student to use the skill

Student Response
- The student responds incorrectly OR does not provide a response
- The student responds correctly

Your Response
- Give the target cue again
- Give reinforcement and state what the learner did

Time Delay
- Wait ____ seconds for the student to use the skill

Student Response
- The student responds incorrectly OR does not provide a response
- The student responds correctly

Your Response
- Give the controlling prompt to the student _____
- Give reinforcement and state what the learner did

Student Response
- The student responds correctly

Your Response
- Give reinforcement and state what the learner did

Data Collection

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Collect data on the learner demonstrating steps of the target behavior/skill. Remember to collect data on correct response (+), incorrect response (-), and no response (NR).
Controlling Prompt: _____
Response Interval/Delay: _____ **Response Interval/Delay:** _____

Trial	Before Prompt	After Prompt	Trial	Before Prompt	After Prompt
1.			1.		
2.			2.		
3.			3.		
4.			4.		
5.			5.		
6.			6.		
7.			7.		
8.			8.		
9.			9.		
10.			10.		
__= Correct __%			__= Correct __%		
__= Incorrect __%			__= Incorrect __%		
__= NR __%			__= NR __%		

Key: + = Correct response, - = Incorrect response, NR = No response

MONITORING PROGRESS CHECKLIST

Learner's Name: _____ **Date/Time:** _____
Observer(s): _____
Target Skill/Goal/Behavior: _____
Directions: Complete this checklist to determine if the learner is making progress with using Time Delay.

MONITORING PROGRESS:

- ❑ Is the target skill or behavior well defined?
- ❑ Is the skill or behavior measurable and observable?
- ❑ Has data been collected and analyzed?
- ❑ Is the skill or behavior too difficult for the learner?
- ❑ Was Time Delay used with fidelity?
- ❑ Are there too many reinforcers?
- ❑ Are there too few reinforcers?
- ❑ Are all team members using Time Delay in a consistent manner?
- ❑ Is Time Delay occurring at a sufficient level to maintain the behavior or target skill?

ANECDOTAL NOTES:

Step-by-Step Guide

This step-by-step practice guide outlines how to plan for, use, and monitor Time Delay.

BEFORE YOU BEGIN…

Each of the following points is important to address so that you can be sure Time Delay is likely to address the target goal/behavior/skill of your learner on the spectrum.

HAVE YOU FOUND OUT MORE INFORMATION ABOUT…?

- ❑ Identifying the interfering behavior…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

For more information about Time Delay, please visit https://afirm.fpg.unc.edu/ .

Keep in mind that the two **Time Delay** procedures are:

- Constant Time Delay
- Progressive Time Delay

While each procedure is different, the practice guide is applicable to all. When unique features are tied to a specific procedure, we will identify them through examples or cautions.

STEP 1: PLANNING FOR TD

The planning step details the initial steps and considerations involved to prepare for using Time Delay with a learner on the spectrum.

1. **Assess learner's current abilities**
   Assess the learner's current abilities to determine if the learner has essential prerequisite skills needed for time delay to be successful.

2. **Select target stimulus and cue**
   - The target stimulus is the event, thing, or situation to which the learner should respond when a team member is not present or after the target skill/behavior is mastered.
   - The target cue will signal the learner to perform the skill or behavior.

3. **Select the controlling prompt**
   Select the least restrictive prompt needed by the learner to use the target skills successfully as the controlling prompt.

4. **Select reinforcers**
   To increase the likelihood that the learner will use the target skill again in the future, select reinforcers that are appropriate for the individual learner and the target skill/behavior.

5. **Identify times and activities for using time delay**
   Time delay can be used during individual work, small group activities, and embedded within ongoing routines and activities at home or at school.

6. **Determine time delay procedure**
   Team members should decide to use constant time delay (implement a fixed delay) or progressive time delay (gradually increase the delay).
   Complete the **Time Delay Planning Worksheet** before using the procedure.

STEP 2: USING TD

This step details the process of implementing Time Delay with a learner on the spectrum.

1. **Establish learner attention and provide cue**
   Establish learner attention by using an attention getting strategy. Next, the team members presents the cue to begin the teaching activity.

2. **Deliver the controlling prompt**
   When beginning to teach a skill using time delay, a fixed 0-second delay is used with both constant time delay and progressive time delay. There is no wait time between the cue and delivering the controlling prompt.

3. **Increase time delay**
   - With constant time delay, team members implement a fixed delay (usually 3-5 seconds) after using the initial 0-second delay.
   - With progressive time delay, team members gradually increase the delay between providing the cue and delivering the controlling prompt.

4. **Respond to learner's attempts**
   Team members will respond to learner's attempts. If the learner correctly responds, team members offer reinforcement and state what the learner did well. If the response is incorrect or no response is provided, team members provide the controlling prompt.

STEP 3: MONITORING TD

The following step details how to monitor the use of Time Delay with a learner on the spectrum and how to determine next steps based on the data.

1. **Collect and analyze data**
   Track learner's unprompted correct responses, prompted correct responses, unprompted errors, prompted errors, and no errors.
   Use the **Time Delay Data Collection Form** to collect data.

2. **Determine next steps based on learner progress**
   Collecting data will help team members decide about the effectiveness of using Time Delay and whether the learner on the spectrum is making progress. If a learner is making progress based upon data collected, team members should continue to use the selected strategies.

   If team members determine that the learner is not making progress, consider the following:
   - Have team members received TD training or is additional training needed?
   - Is the target goal/behavior/skill well defined?
   - Is the target goal/behavior/skill measurable and observable?
   - Has enough time been devoted to using Time Delay (frequency, intensity, and/or duration)?
   - Is the target goal/behavior/skill being targeted during appropriate routines and activities?
   - Is TD appropriate or a 'good fit' for the target behavior?
   - Are TD strategies addressing the target behavior?
   - Does the learner need additional supports?
   - Are the selected materials and activities intrinsically motivating for the learner?

   If these issues have been addressed and the learner on the spectrum continues not to show progress, consider selecting a different evidence-based practice to use with the learner on the spectrum.

Implementation Checklist

BEFORE YOU START, HAVE YOU…?

- ❑ Identifying the target goal/behavior/skill…?
- ❑ Collecting baseline data through direct observation…?
- ❑ Establishing a target goal or outcome that clearly states when the behavior will occur, what the target goal or outcome is, and how team members and/or observers will know when the skill is mastered…?

If the answer to any of the above questions is 'No,' review the process of how to select an appropriate EBP (https://afirm.fpg.unc.edu/selecting-EBP).

	Observation:	1	2	3	4	5
	Date:					
	Observer's Initials:					
	STEP 1: PLANNING					
1.1	Assess learner's current abilities					
1.2	Select target stimulus and cue					
1.3	Select controlling prompt					
1.4	Select reinforcers					
1.5	Identify times and activities for using time delay					
1.6	Determine time delay procedure					
	STEP 2: USING					
2.1	Establish learner attention and provide cue					
2.2	Deliver controlling prompt					
2.3	Increase time delay					
2.4	Respond to learner's attempts					
	STEP 3: MONITORING					
3.1	Collect data on target behaviors					
3.2	Determine next steps based on learner progress					

Tip Sheet for Professionals

TIME DELAY ...

- Is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old that can be implemented in multiple settings.
- is implemented by an adult providing a controlling prompt before learner responds which reduces errors and increases reinforcement opportunities.

WHY USE WITH LEARNERS ON THE SPECTRUM?

- Time delay reduces prompt dependence.
- Time is user-friendly and cost efficient, because it does not require any additional materials other than those that are needed for the selected instructional activity.

TIPS:

- Assess the learner prior to using time delay to be sure the learner has the prerequisite skills needed for the practice.
- Select a controlling prompt that is the least restrictive prompt needed by the learner to use the target skill successfully.
- Respond to the learner's attempts based upon if the attempt was correct or incorrect.

INSTRUCTIONAL OUTCOMES:

The evidence-base for Time Delay supports its use to address the following outcomes, according to age range, in the table below:

Age	Academic	Adaptive	Behavior	Cognitive	Communication	Joint Attention	Motor	Play	School readiness	Social	Vocational
0-2						Yes				Yes	
3-5	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6-11	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes
12-14	Yes	Yes			Yes					Yes	Yes
15-18		Yes							Yes		Yes
19-22	Yes	Yes			Yes				Yes		Yes

STEPS FOR IMPLEMENTING:

1. **PLAN**
   - Assess learner's current abilities
   - Select target stimulus and cue
   - Select controlling prompt
   - Select reinforcers
   - Identify times and activities for using time delay
   - Determine time delay procedure

2. **USE**
   - Establish learner attention and provide cue
   - Deliver controlling prompt
   - Increase time delay
   - Respond to learner's attempts

3. **MONITOR**
   - Collect and analyze data on target behaviors
   - Determine next steps based on learner progress

Time Delay
TD

This sheet was designed as a supplemental resource to provide basic information about Time Delay for professionals working with learners on the spectrum.

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

Parent's Guide

WHAT IS TD?

- Time Delay is a foundational evidence-based practice for children and youth on the spectrum from 0-22 years old.
- Time delay includes a set of procedures that fades prompts as learners gain new skills.
- The two time delay procedures are constant time delay (CTD) and progressive time delay (PTD).

WHY USE THIS TD WITH MY CHILD?

- Time delay assists learners with transferring target skills and behaviors to new situations.
- Research studies have shown that Time Delay has been used effectively with many age groups to achieve outcomes in the following areas: academic, adaptive/self-help, behavior, communication, joint attention, motor, play, school readiness, social, and vocational.

WHAT ACTIVITIES CAN I DO AT HOME?

- When your child struggles with an activity at home (brushing teeth, eating with a spoon, greeting family members, cleaning up room), make sure your child is successful by immediately helping your child complete the activity. Provide the level of help needed for your child to be successful.
- Gradually allow your child the opportunity to try activity on his/her own before providing help.
- When your child completes a difficult task, be sure to provide encouragement and/or a reward.

Time Delay
TD

This parent introduction to TD was designed as a supplemental resource to help answer questions about Time Delay.

To find out more about how this TD is being used with your child, please talk with:

_____

For more information about this selected evidence-based practice, please visit https://afirm.fpg.unc.edu/.

Additional Resources

WEBSITES:

Grattan, J., & Demchak, M. (n.d.). *Progressive Time Delay Prompting.* https://www.unr.edu/ndsip/english/resources/tips/progressive-time-delay-prompting

Ledford, J.R., Chazin, K.T., Maupin, T.N. (2016). Progressive time delay. In *Evidence-based instructional practices for young children with autism and other disabilities.* http://ebip.vkcsites.org/progressive-time-delay

The Center on Secondary Education for Students with Autism Spectrum Disorders. (n.d.). *Evidence-based Practice (EBP) High School Case Study: Time Delay.* http://csesa.fpg.unc.edu/highschool-case-studies

CEC Standards

INITIAL PRACTICE-BASED STANDARDS FOR EARLY INTERVENTIONISTS/EARLY CHILDHOOD (0-5 YEARS; CEC, 2020)

Standard 6: Using Responsive and Reciprocal Interactions, Interventions, and Instruction

6.3 Engage in ongoing planning and use flexible and embedded instructional and environmental arrangements and appropriate materials to support the use of interactions, interventions, and instruction addressing developmental and academic content domains, which are adapted to meet the needs of each and every child and their family.

6.6 Use responsive interactions, interventions, and instruction with sufficient intensity and types of support across activities, routines, and environments to promote child learning and development and facilitate access, participation, and engagement in natural environments and inclusive settings.

6.7 Plan for, adapt, and improve approaches to interactions, interventions, and instruction based on multiple sources of data across a range of natural environments and inclusive settings.

INITIAL PRACTICE-BASED STANDARDS FOR (GRADES K-12; CEC, 2020):

Standard 5: Supporting Learning Using Effective Instruction

5.1 Use findings from multiple assessments, including student self-assessment, which are responsive to cultural and linguistic diversity and specialized as needed, to identify what students know and are able to do. They then interpret the assessment data to appropriately plan and guide instruction to meet rigorous academic and non-academic content and goals for each individual.

5.2 Use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.

5.3 Use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.

5.6 Plan and deliver specialized, individualized instruction that is used to meet the learning needs of each individual.

ADVANCED PRACTICE-BASED STANDARDS (CEC, 2012):

Standard 3: Programs, Services, and Outcomes

3.1 Design and implement evaluation activities to improve programs, supports, and services for individuals with exceptionalities.

3.2 Use understanding of cultural, social, and economic diversity and individual learner differences to inform the development and improvement of programs, supports, and services for individuals with exceptionalities.

3.3 Apply knowledge of theories, evidence-based practices, and relevant laws to advocate for programs, supports, and services for individuals with exceptionalities.

GLOSSARY

Antecedent - a cue that tells the learner to use the target skill/behavior

Baseline - information gathered from multiple sources to better understand the target behavior, before using an intervention or practice

Baseline data - data collected on current performance level prior to implementation of intervention

Consequence - feedback/reinforcement provided by teachers and practitioners.

Constant time delay - following a minimum of two trials using the 0-second delay, team members use a fixed amount of time between the cue and the controlling prompt (typically 3-5 seconds).

Controlling prompt - ensures the learner performs the target skill/behavior correctly.

Cue - signals the learner to perform the skill.

Duration data - records how long a learner engages in a particular behavior or skill.

Event sampling - collects frequency data at every instance the behavior occurs.

Frequency data - used to measure how often the learner on the spectrum engages in the target skill or behavior.

Generalization - when the target skill or behavior continues to occur when the intervention ends, in multiple settings, and with multiple individuals (e.g., peers, teachers, parents)

Gestural prompt - a gesture/movement provides the learner with information about how to use a target skill or complete a task

Individualized Intervention - an intervention that is planned and implemented in a way specific to the learner receiving the intervention

Interfering behavior - is a behavior that interferes with the learner's ability to learn.

Model prompts - involve demonstrating the target skill and are used when verbal or visual prompts are not sufficient in helping learner use the target skill correctly.

Physical prompts - useful when teaching motor behaviors and when the learner does not respond to less restrictive prompts.

Positive reinforcement - refers to the presentation of a reinforcer after a learner uses a target skill/behavior, therefore encouraging him/her to perform that behavior again.

Prompt - any help provided that will assist the learner in using specific skills. Prompts can be verbal, gestural, or physical.

Progressive time delay - following a minimum of two trials using the 0-second delay, team members gradually increase the wait time rather than using a fixed time interval.

Prompted correct response - Learner uses the target skill/behavior correctly after being prompted.

Prompted incorrect response - learner attempts to use the target skill/behavior after being prompted but performs it incorrectly.

Reinforcement - feedback that increases the use of a strategy or target behavior/skill.

Reinforcer sampling - helps to identify activities and materials that are motivating to learner with autism. Also known as a preference assessment.

Reinforcers - increase the likelihood that the target skill/behavior will be used again in the future.

Response interval - the amount of time the learner has to respond.

Target behavior - the behavior or skill that is the focus of the intervention. Behavior may need to be increased or decreased.

Target stimulus - the event, thing, or situation to which the learner should respond when a team member is not present or after the target skill/behavior is mastered.

Team members - includes the parents, other primary caregivers, IEP/IFSP team members, teachers, therapists, early intervention providers, and other professionals involved in providing services for the learner on the spectrum.

Time delay - is a response prompting procedure that systematically fades prompts during instructional activities.

Unprompted correct response - learner uses the target skill/behavior correctly without prompts.

Unprompted incorrect response - learner attempts to use the target skill/behavior without prompts but performs it incorrectly.

Verbal prompts - includes any verbal assistance provided to learners to help them use a target skill correctly. Verbal cues range in intensity level from least to most restrictive.

Visual supports - visual supports are concrete cues that are paired with, or used in place of, a verbal cue to provide the learner with information about a routine, activity, behavioral expectation, or skill demonstration.

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