

TEACHING GUIDE

Teaching Shoe Tying with the Activity Trainer Activity App

The Activity Trainer Activity App (ATAA) is designed to help a **teacher** or **parent** teach a **skill** (also called **task** or **activity**). The teacher or parent acts as the **facilitator** that will help the learner by providing different types and degrees of **prompting** and **systematic teaching** to ensure success. Prompts can be **physical**, **verbal**, **gestural**, or **proximity** and are applied as **degrees** or **levels**. For example a physical prompt of hand-over-hand helping a student cross his shoe laces would be a high level of prompting, whereas touching or guiding the wrists, forearms, or elbows would be lower levels of physical prompting.

Generally the facilitator will stand behind and to the side of the student. The student will be seated in front of a shoe on a table. The tablet should be close to the shoe where the student can easily view both. The facilitator should be able to easily interact with student, shoe, and tablet.



Range of Learners: The Activity Trainer (AT) is designed to work with a range of learners from typical to very low. High level learners may be able to learn from the full video whereas lower level or younger learners would need to learn the activity step by step and then the sequence of steps. Many learners can learn from the video and then be able to complete the task without video or other support. Other learners may need some coaching in natural environment situations before they are able to do the task appropriately and independently. Some learners may need visual supports like images or text to cue them until they can do the task independently.

High level learners: Just select the "**Full video**" from the presentation menu and use the **Pause** and **Play** buttons to occasionally pause the video to allow the student to catch up and then press **Play** to continue. You can also just touch the video to play and pause. When at the end of the activity, untie the shoe and get it ready to do the task again, and then touch the **Restart** button to start the activity over from the beginning. Depending on how well the student is learning and remembering, you may need to practice the activity a number of times per session and a number of sessions over some number of days. The student should be competent on the table top before



transitioning to his foot.

Lower level and young learners: Shoe tying is a fairly complex fine motor task and many young children and special needs individuals have difficulties learning the task. Many learners will need the task broken down into steps learning the parts before learning the complete sequence of the task. There are several teaching strategies all of which are supported by the Activity App.

- **Teaching the parts and then teaching the sequence:** Just build the student to independence on each individual step and then practice the steps in sequence.
- **Back Chaining:** Start the student on the last step, and then the last two steps , and so on until the student is completing the complete task. Make sure the student is able to do independently the number of steps current sequence before adding another step to the sequence.
- **Forward Chaining:** Start the student on the first step, and then the first two steps and so on until the student is completing the full task. Make sure the student is independent on each sequence level before adding another step.

Since shoe tying is a reasonably complex fine motor task, and it is easy for a learner to get discouraged, it can be effective to teach the individual steps first starting with the simpler steps and working to the more difficult steps. It turns out the the natural sequence starts fairly simple and gets more difficult, so you can build a sence of success by starting with the first step. A successful student is a more engaged and interested student!

Teaching the individual steps: To trial a specific step like "Cross the laces over each other" set the shoe to the initial state of the step. In this case it would be where the laces are laying on the table uncrossed on each side of the shoe.



Have the student's hands ready but not touching the shoe or laces (in this case). Select the step from the presentation menu and let it play.



The first time you may want to not facilitate to determine what the student can do independently (**Probe Test**).



Trials: For subsequent **trials** you may need to provide some type of **prompt** to ensure the student is successful.

It may take a few to many trials on a specific step for the student to be independent. For each trial of the same step, set the shoe and student to the initial state of the step, then either touch the the video or the Restart button to start playing the step over.



Prompting: Prompting is in some action or cue from the teacher to facilitate the success of the student. Prompts can be **physical, verbal, gestural**, and sometimes **proximity**. **Prompt fading** is the process of using successively lower levels of prompts until the prompt is eliminated. Prompting can be applied as **most-to-least** or **least-to-most**.

Especially with students that have had a lot of failure in learning, it is important to not let the student fail. Prompting and prompt fading is consistent with **errorless teaching** techniques where we are not going to let the student fail, building a sense of success and cooperation, and fading prompts until the student is independent. Prompts may need to be faded gradually in a number of steps until the student is independent. How fast or slow prompts can be faded is dependent on the student.

Physical prompting can be hand-over-hand; or guiding or touching the wrists, the forearms, or the elbows.



Most-to-least with **physical prompting** is starting with a high level of prompting like **hand-over-hand** and fading to the least level of the prompt like just touching the elbows and then eliminating all prompting or changing to a gestural, or verbal prompt. **Least-to-most** prompting would be increasing the prompt until the student is successful. Both techniques can be effective, but different learners may respond better to one or the other. The facilitator may have a preferred method but ultimately should transition to what works or works best for the learner.

The goal for each step is that the student is independent and the teacher is not providing any type or

level of prompt. As the student becomes independent on successive steps, it is good to go back and probe, and reteach if necessary, previous steps to keep them "**maintained**".



Verbal prompting: The AT builds the language associated with the task as well as with the individual steps. The facilitator can use this language as **verbal prompts** to guide the learner through the task especially when transitioning to natural environment use of the skill. The goal is to use less and less language until the student is independent.

Gestural prompting can be effective getting the student to perform the task or segment. Here the facilitator would point to something related to the task or make a movement of their hand or other body part that would represent or initiate the action desired.

Proximity prompting is where the student will perform the task as long as the facilitator is present but will not perform the task if the facilitator is not present. To fade the proximity prompt the facilitator may need to incrementally get further away from the student through successive trials until the facilitator does not need to be in the same room or is otherwise out of sight. Facilitation from behind the student minimizes the need for proximity fading since the facilitator is only a small part of the student's view from the beginning.

Ideally, prompting is not necessary. Ideally in video modeling, the student has, or you have developed a "**see it - do it**" (**mimic**) response. For initial use by a student of the AT, a little verbal encouragement may be sufficient to get the student to understand that he needs to mimic or follow the video. If the student does not have this mimic behavior, or you are not able to develop the response with just a little coaching, then you should back down to simpler activities or easier parts of an activity. The goal is to use as little prompting as possible. However, you may need to assist the student with fine motor skills or physically intervene with the student where there are safety issues.

Reinforcements: Provide reinforcements (praise, tickles, favorite toys, small edibles, ...) at appropriate intervals and at the end of the session to keep the student motivated for the hard work. The important thing about reinforcements is that the student finds them reinforcing.



Sequences: Once the student can do the individual steps or if teaching as a back chain or forward chain, then select a sequence from the presentation menu. The first step of the sequence will start

playing. Once finished playing and the student is finished with the step, touch the page turner (bottom right corner) to advance to the next step. Repeat until the last step of the sequence. Reinforce the student and either start again or end the session. You can start a step again by touching the restart button, or start the sequence over by selecting it from the presentation menu.

If you are **back-chaining**, just select the last step in the steps submenu from the sequence in the presentation menu. If you are **forward-chaining** just restart the sequence by selecting it from the presentation when at the last desired step in the forward-chain or select the Done button to exit.

Full Video: Once the student can perform the sequence, then you can select the "Full video" and let the student perform the complete task. You may need to use the pause and play capabilities if the student has a hard time keeping up. They do not necessarily need to keep up if they are remembering what to do to complete the task.

Video the Image Transition: If the student needs continued visual support to cue the task or you want to work the task into a visual schedule, then select the video to image transition once the student can do the task. You can then follow up with just the image and audio and then just the image to cue the skill. You can print off the representative image for cueing and schedules, or print off the sequence of images corresponding to the steps for sequencing tasks (getting the student to put them in order). Print the image(s) from our website support page [AES Activity App](#).

Transitioning to his foot: Once the student can independently tie a shoe table top, then transition to his foot. Through the process of learning the steps, he should have the language associated with the various aspects of shoe tying. First tell the student to tie his shoe and see if he is able to do this independently. You may need to verbally prompt "Cross the laces" to get him started or touch his elbows or do hand over hand to give him the idea that he can do the skill here too. You may have to go back through the steps and then sequences until he is independent but in many cases with a little coaching the student can "generalize" the skill to his foot. You may also need to generalize to other people telling him to put on or tie his shoes, other shoes, other places, or realizing on his own that he needs his shoes on and tied before he can go outside (or some other favorite activity).



Reading comprehension: For students that can decode (saying written words) but not comprehend, you can facilitate reading comprehension with the **IA**, **ITA**, **TA**, and **T** options in the menu. The audio is the instructional or self talk language corresponding to the step or task. The text corresponds to the audio. Start with the IA (image & audio) to cue, and then transition to the ITA (image, text, and audio). Repeat trials immediately and also after being away from the task for a while. When transitioning to a new level, trial the level immediately after trialing the previous level.