5 Teaching Strategies for the Home and Community

Lisa and Charles are watching their son Albert as he struggles to put together his train set. They have set a goal of teaching him to do this independently so that he can play while they attend to chores around the house. They know that they need to teach a sequential lesson, since there are several steps involved in connecting the trains. They're not sure, however, how best to help him. Should they point to where the trains connect or just tell him what to do? Is there a way to teach him without having to physically guide him through the right actions? Should they show him a completed set or have him watch them while they put it together? Lisa and Charles wonder whether helping Albert this time will mean that he will come to rely upon them in the future rather than figuring it out for himself. How should they reduce how much help they are giving him? They also aren't sure how to reward him—they know Albert likes to play with the trains, but should they praise him as well? Will that distract him?

Lisa and Charles are struggling with issues that face everyone trying to teach a new skill, whether at home or at school. In addition, they have heard that it is important for children with autism to experience few, if any errors, when learning. Is there a way to teach that will minimize errors and yet not result in the child becoming dependent upon his parents' help? Like most people, they have heard about trial-and-error learning but wonder whether this would be a good strategy for their son—wouldn't this lead to many errors? (In fact, one prominent behavior analyst, Dr. Beth Sulzer-Azaroff, reminds us to practice

"*trial and success*" rather than trial-and-error. Careful attention to how we design lessons will result in few errors and effective learning.)

Like Lisa and Charles, you may think that teaching children with autism is hard, or may not know where to begin. The whole idea of keeping your child from making any errors also may seem very intimidating. We believe, however, that parents and other family members are very capable of teaching their children new skills at home and in the community. This chapter will tell you how to begin.

What Is Teaching All About?

Before we focus on what teaching is all about, let's review what it means *to learn*. If you've taught a successful lesson to your child, then your child can do something when the lesson is completed that he or she could not independently accomplish earlier. That is, as teachers, we only know if our children have learned a lesson if we see them doing something different after the lesson than they could do before—they then can "show us what they know."

When we start a lesson, the child cannot perform the lesson goal. In the example above, Albert cannot put his trains together. Let's consider how Albert's parents can teach him to put his trains together. What will Lisa need to do on the first day that she attempts to teach him this skill? If she simply watches him, he will stand there and not accomplish the task. Lisa will have to help her son put the trains together on this day, although her goal is to teach him to play independently, even if she is not in the room. Therefore, one way to think about this (and most) lessons is that the teacher (Lisa) must help the child (Albert) at the start of the lesson but then must stop helping while the child continues to perform the target skill. When the child is independent, he will be responding to *natural cues* in the surroundings—such as the train itself, the tracks for the trains, etc.

Prompts

How can Lisa help Albert on the first day? We immediately recognize that there are many potential ways of helping. Each strategy of help is called a *prompt*. A prompt is simply something that a

teacher uses within a lesson to help the child perform the target skill. For example:

- Lisa could tell her son to pick up the train. That would be a type of ***vocal*** or ***verbal prompt.*** Lisa knows, however, that Albert has a very limited receptive vocabulary, so she isn't sure that he will understand what she is saying. Her words would probably not be an effective prompt because it would not be helpful to Albert.
- Lisa could try to point to the train—thus, trying a type of ***gestural prompt.*** In this case, Lisa knows that Albert rarely looks at what she is pointing to and thus does not choose to try this strategy.
- Lisa could show Albert what to do—thus, trying to ***model*** certain actions that he can then imitate. But Lisa knows that Albert's schoolteachers are still trying to teach him to imitate so she doubts her modeling will be effective right now.
- Lisa could hold up a picture of the train—thus, trying a type of ***visual prompt.*** Here, too, Lisa realizes that her son does not yet seem to always associate pictures that are shown to him with objects around him.
- Finally, Lisa realizes that she can physically guide Albert's hands to put the train together—thus, trying a type of ***physical prompt.*** She knows that this will be effective because her son has accepted her assistance when she has physically helped him with other simple tasks.

Eliminating Prompts

Once Lisa has selected the prompt she will use—in this case, physical assistance—she now needs a strategy to get rid of the prompt.

That is, she must plan to reduce how much physical help she provides so that over time Albert will not need any physical or other prompts to complete putting his trains together.

There are many effective ways to get rid of a prompt. First, Lisa could reduce how much physical help she provides over successive opportunities. For example, for each new car that Albert is trying to add to the train, she could provide slightly less assistance. We would call this "*fading*" a physical prompt, or using *graduated guidance*. There are several ways that prompts can be faded. For physical prompts, such as guiding a child's hand movements, you can gradually decrease how much physical pressure you apply over successive opportunities. You also can alter where you touch the child—you can start with hand-over-hand and then gradually adjust your point of contact to the child's hand, wrist, arm, and then shoulder. The key is to continue to gradually reduce the assistance and thus move the child toward independence.

Lisa also could slightly increase the amount of time she waits between handing Albert a train car and providing physical assistance. We call this strategy "*delayed prompting.*" This strategy is often a good choice when you are sure that your prompt will work because on every opportunity, the child succeeds—either on his own or with the prompt.

There are many strategies to eliminate and reduce prompts—far too many for us to review them all here. Each is designed to help a child learn to respond to natural cues rather than teacher prompts. For more information about these strategies we encourage you to read *The Pyramid Approach to Education* (Bondy and Sulzer-Azaroff, 2002—especially Chapter 9).

Are Some Prompts Better Than Others?

By definition, a prompt is something you do or modify within a lesson that successfully helps your child perform the particular skill you are focusing on. Some people prefer using vocal prompts; they like to talk to the child almost continuously. Other people prefer using picture and other visual prompts; they put pictures and signs on everything, everywhere in the home. It is not possible to determine which prompt is "better" than another prompt. If it works, great!

A bigger challenge than finding a prompt that works is selecting a strategy that will remove the prompt. I may find using verbal prompts so easy to use that I forget to plan to remove them. Or, I may put so

many pictures around the house that I forget that they won't be in other homes or locations. If I use a series of pictures to prompt a child to get dressed when I am first teaching him that skill, it is my responsibility to recognize that these pictures will later need to be faded. I need to remember that it is possible for my child to learn to get dressed without the pictures (or some other prompt) and I need to plan a strategy to reach that independent goal.

What Do We Do If a Prompt Is Not Effective?

Once you have decided what type of lesson you want to teach—discrete vs. sequential, for example—you then select the type of prompt to use: vocal, physical, gestural, etc. Then you choose a strategy to eliminate the prompt. It is important to remember that not all plans will work and that no one can guarantee that the selected strategy will be effective. At best, we are making educated guesses! Prompts are things we introduce into a lesson that help the child perform the task. If the strategy is not helpful, then it is not really a prompt.

If you point to a picture to help your child pick it up but he does not pick up the picture, then what you did was not really a prompt. In this case, you would need to find another way to help your child—something that will act as a prompt. Likewise, it is possible that when you try to use physical guidance to help your child, he resists and pulls his arm away. In this case, your physical guidance was not a prompt. Perhaps shining a light on the object will draw your child's attention to the object, leading him to pick it up. In this case, the light is a prompt. Essentially, you will not know whether something is a prompt until you try it out and see if it helps your child. So, be willing to be flexible and try out different types of prompts for different lessons.

Should We Combine Prompts?

While Lisa is choosing which prompt to use with her son, she wonders whether it would be better to use several prompts at the same time. That is, should she show him what to do (perhaps using photographs) while she simultaneously tells him what to do as she guides him in what to do? After all, it seems logical that the more help she provides, the more likely Albert is to complete the task. However, she realizes that the goal of her lesson is to eliminate all prompts so that

Albert can play with his trains independently. She knows that if she uses three or four prompts at the same time, she will then need to plan to get rid of all of these prompts. It will be hard enough to eliminate one prompt! More is not always better. So, she wisely plans to use the physical prompts that she knows will be effective and designs a plan to eliminate that single type of prompt.

Charles understands the need to get rid of helpful prompts, but he is concerned that if they do not talk to Albert while he is learning to put his train together, he will not learn any language associated with the task. He wonders if they will need to remain totally silent throughout the lesson. Lisa points out that prompts are actions teachers use before the child tries an action, and while she does not want to combine prompts, she too wants Albert to hear their words in hopes that he will learn to associate them with the activity. So, she rightly advises that they can talk to Albert while he is doing a prompted step (or just after) rather than talk during the prompt itself. Lisa will guide Albert to connect two trains and then immediately say something along the lines of, "Yes! You put the trains together!" or "Wow! Look at the trains! They are together now!" Charles now understands that it is not about *whether* to speak or not; it is more about the timing of what he will say while teaching his son.

Can We Use Prompts When Addressing Challenging Behavior?

In Chapter 8, we discuss the importance of teaching alternative behaviors to replace challenging behaviors you are targeting in your teaching efforts. Part of that overall strategy may involve prompting your child to engage in the alternative behavior, and we will now discuss some issues related to this use of prompts.

One important issue concerns when to prompt your child to do the alternative behavior. We do not think it is a good idea to try to teach any skill when a child is in the midst of a tantrum. During a tantrum, the goal is to calm things down and avoid injuries or serious property damage. However, you should be attentive to what may have triggered the reaction.

Ideally, you would read your child's cues and prompt him *before* he has a tantrum. For example, let's say your child is still in the process of learning to give you items that are not working correctly rather than

getting down on the floor and screaming until you help him. To help your son learn the new skill, you need to create situations that lead to him needing help—for example, you can give him a bottle that is closed too tightly for him to open. After you've handed him the bottle but before he screams (possibly within a second or two of struggling with the bottle top), you would arrange for his sister to prompt him (with physical guidance) to hand the bottle to you. You would then say, "Oh, you need help!" and immediately open the bottle. Notice that the prompt from his sister came before any meltdown and not in the middle of screaming. Over opportunities, you would get his sister to gradually reduce the amount of physical assistance she provides.

If you prompt your child once he starts screaming, that is likely to reward him for both screaming and handing you the bottle. Thus, he's likely to repeat the scream the next time a similar situation arises.

Where Should We Start Sequential Lessons?

Whether we are teaching a discrete type of lesson or one that involves many steps, our overall strategy typically involves finding an effective prompt and then eliminating it. In Chapter 4 we discussed the importance of writing down a task analysis for sequential lessons. Once this is completed you still need to decide which end of the sequence you want to teach first. When we start by trying to teach the first step, we describe this as *forward chaining*. For example, you put a puzzle form before your child and you then teach him to put in the first piece, and then another, and another . . . until all the pieces are correctly placed. Another way to teach a sequence is to first teach the last steps—a process described as *backward chaining*.

At first, backward chaining may sound counterintuitive, but there are many examples in our lives when we naturally use this strategy. Think about teaching your daughter to ride a bicycle. Most likely, you helped her get on the bike, supported her while she put her feet on the pedals, helped her start to move the bike, and finally—when she seemed to have balance and a steady speed—you let go! In this case, the first thing she learned was the very last step—keeping the bike moving ahead. The last thing she learned was how to get on the bicycle without help and start to pedal.

Backward chaining is a strategy that we often suggest when teaching the steps of a task analysis. In our puzzle example, if we were

using backward chaining, we would put in all of the pieces except the last one and then help the child put that piece in. Once he has learned to put in that piece, then we put in all the pieces except the last two. Once he's put in the second to the last piece, he can complete the puzzle since he's already learned about the last piece. In general, it is the last piece that is nearest in time to completion of the puzzle and thus may be the most rewarding piece of all.

We can use backward chaining in many routines around the house, such as the one in Table 5-1.

Table 5-1 | The Last Step of Sequential Activities

Area	Activity	Last step
Bedroom	Folding clothes	Top half of T-shirt over bottom half
Bedroom	Tying sneaker laces	Pull both loops tight
Kitchen	Making PB&J sandwich	Put bread slices together
Laundry room	Putting wet clothes in dyer	Taking last item in washer and placing in dyer
Family room	Operating (and loading) a DVD player	Pushing the "Play" button
Garden	Fill and use watering can	Pour water on plants

Can We Teach without Prompting?

A major concern about using prompts to help children learn skills is that they will learn to rely upon the prompt, or become *prompt dependent*. Some people assume that prompt dependency is a common feature of children with autism. However, we think that since it is the teacher who selects and uses the prompt, then it is the teacher's responsibility to remove that prompt. In part, that is why we suggest using only one prompt at a time—if you pile them up, then you will have a great deal of work to do to eliminate them all! Whenever we teach using prompts, then we will have to eliminate those prompts.

Fortunately, there are several effective teaching strategies that do not involve prompts and we will discuss these in the next section.

Shaping

The best-known teaching strategy that does not involve using prompts focuses instead on the power of rewards to teach new skills. One of the founders of behavior analysis, B. F. Skinner, described this strategy as *shaping*. In this strategy, the teacher gradually changes the standards for reward, thus encouraging very small adjustments in performance—which, over time, can result in a large behavioral change. For example, Rayna wants to teach her daughter, Doris, to go from dot to dot on a piece of paper using a pencil. She could use physical prompts to guide Doris's actions. Instead, she puts two dots very close together—so close that almost any drawing motion will connect the two.

As soon as Doris draws from one dot to the other, Rayna claps her hands and praises her daughter. Now, Rayna starts gradually to increase the distance between the dots, in increments that are so slight that Doris does not notice the change from opportunity to opportunity. Fairly soon, the dots are inches apart and Doris thinks it's a great game to see where her mother will place the next dot. Notice that Rayna did not use any type of prompt and therefore she did not have to remove any prompts. She did have to very carefully watch her daughter so that she could reward her correct efforts immediately. On any occasion when Doris did not connect the dots, Rayna simply provided another opportunity— sometimes reducing the distance between the dots to improve the likelihood of success.

Shaping is an excellent strategy for teaching children to respond to simple directions such as coming when their names are called or to improve various sports skills (such as throwing a ball, jumping, running, etc.). For example, if your child does not seem to react when his name is called, you first would find a small reward that he enjoys, one that he immediately tries to take when he sees it. In this situation, while you are standing about 10 feet from your child, you can call out his name, and, even if he does not react in any manner, you would slowly approach him while holding his special toy in your open hand. At some point while you are approaching him, he is likely to see the toy and reach for it. Sometime later (when you have the toy again), you repeat this process and continue to gradually walk toward him. After a few opportunities like this, he is likely to notice you while you are walking toward him. At that point, slow down so that he will start walking to you.

Continue this process of calling and approaching, and you are likely to find that upon calling your child's name, he looks toward you and starts to approach. At this point, after you call his name, gradually begin to hide the toy so that he sees you but not the toy. Once he reaches you, praise him and of course give him the toy. Over time, when he approaches you after you call his name, you can use other reinforcers, especially praise and hugs. Eventually, you may introduce some simple tasks for him to do before providing praise. In this manner, he has learned to come to you when you call his name. Sometimes he gets a material reward, sometimes simple social rewards, and sometimes a small task to perform. Notice you did not prompt him during any part of this lesson. Yes, shaping behavior requires great patience on your part but the outcome is well worth it!

In teaching athletic skills, such as throwing a ball, shaping will be far more effective than trying to find an effective prompt. For example, if your child can toss a ball while you stand 2 feet away, you can then try standing 2½ to 3 feet away and praise all successful throws. Gradually move further away and praise all good throws. If you find that you reach a point where you've stepped too far away—several errors have occurred in a row—then move a bit closer to the point where your child succeeds again. When you have successfully "stretched" the length of your child's throws on one day, you may want to try shortening that distance a bit at the start of the next day while aiming to exceed the previous day's limit by the end of the new day. Many coaches apply this strategy in their training, even if they don't describe it as shaping!

Shaping has been successfully used to teach all types of skills. It can be used to help children articulate more clearly, improve their penmanship, be more creative in terms of artwork and writing, and almost anything you can think of! The keys to using shaping are:

1. to know what your child can currently do,
2. to have precise information on what you want your child to do, and
3. to develop a clear plan to identify tiny steps between those two behaviors.

Shaping takes patience and a keen eye (or ear!). You will be tempted to add prompts in an effort to make the learning process go more quickly, but you must remember that you will have to remove every prompt you add into a lesson. With shaping, there are no prompts to remove!

For more information about how to use the power of shaping in your home (for everyone!), you may want to check out Karen Pryor's website on clicker-training (www.clickertraining.com) or the TAGTeach International website, for information on teaching various sporting skills (www.tagteach.com). Clicker-training is the term used to describe how teachers can use a simple clicker to provide timely feedback for successful performance. The advantage of a clicker is that we can use it immediately and it always sounds the same—unlike our voice, which often varies in tone, quality, strength or some other feature. Clicker-training has even been used successfully to help train high-level gymnastics students.

Video Learning

Video learning (video modeling) is a relatively new teaching method in which peers, siblings, or adults are videotaped performing a skill correctly and then the video is shown repeatedly to a child who needs to learn that skill. A number of recent studies have shown that many children with and without autism can effectively learn skills and routines if they first watch videotaped examples and are then quickly given an opportunity to practice the modeled skills. This strategy has been shown to be effective for teaching both communication and motor skills. Some of the skills taught via video modeling have included play skills such as having a tea party, going shopping, and baking. More advanced social skills, such as perspective-taking, can also be improved via video modeling (Charlop-Christy and Daneshvar, 2003).

Some researchers have shown that having children watch videos of themselves—video self-modeling—can help them learn to more consistently use skills that they only occasionally use. For example, two researchers (Wert and Neisworth, 2003) demonstrated that children learned to be more spontaneous with their spoken requests after watching videos of themselves making requests in guided situations.

Review

In this chapter, we've reviewed some general guidelines that should help you create effective lessons at home and in your commu-

nity. In teaching most lessons, you will need to help your child perform a task—typically, by using a variety of prompts. Whenever you use a prompt, however, you also need a plan to eliminate that prompt so that your child will be able to perform the task without your assistance, in response to cues that are part of the natural environment, including the social surroundings. There are many strategies for eliminating prompts and none will work in every situation all of the time. Therefore, you should try to vary the types of prompts you use and the types of strategies you use to get rid of those prompts.

It is possible to teach without the use of prompts by using shaping. This strategy relies upon reinforcing small changes in behavior that add up over time to dramatic changes in performance. Although shaping requires patience and attention to detail, it has the advantage of not requiring a strategy to eliminate prompts.

In the next chapter, we will look at strategies used in the Pyramid Approach to minimize the chances that a child will make errors when learning, as well as ways to thoughtfully respond to errors when they do occur.