

Building Communication Skills in a Child with Autism

The Role of Technology

Lois Jean Brady, MA, CCC-SLP, CAS



Technology plays a significant role in today's society. Advances in technology are changing health care, education systems and the way we communicate. Technology also plays an important part in the life of a child with autism. Parents now have information, apps and technology-based interventions at their fingertips. One way that technology has been particularly useful in the autism community is in helping to improve communication skills.

Many individuals with autism spectrum disorder (ASD) have difficulty communicating, and professional help is frequently sought to help improve communication skills. Some 40 percent of children with autism are non-verbal.¹ A child with autism might also have difficulty transitioning from verbal speech to language, recognizing facial expressions, interpreting body language and gestures, or making eye contact.

How Can Technology Help?

Most children with ASD are drawn to electronic devices, including computers, phones and tablets. Using technology to assist in any type of therapy is advantageous because the child is drawn to the device and has intrinsic motivation to use it.

In the past, communication was taught primarily through flash cards and board games. Although these tools have a role, most therapists are now incorporating mobile devices into their therapy sessions. Mobile devices provide a child with autism the opportunity to learn how to *use* words rather than merely learning how to *say* words.

If your child needs assistance to develop speech or communication skills, a speech language pathologist (SLP) can help. When searching for the right SLP, inquire about the extent to which the pathologist is using technology and in what areas. The following suggestions on the use of technology may be helpful in improving your child's communication skills.

1. Technology captures a child's attention

Many non-verbal, or minimally verbal, children with autism have difficulty staying attentive during speech or language therapy. They might even avoid paying attention to a parent or therapist out of fear that they will fail again at the required task. When a child begins paying attention and focusing on the task, progress can be made. Technology is an amazing tool to help capture a child's attention at the beginning of every therapy session. Apps such as Shape Builder have a simple cause and effect strategy. Every child can be successful at these simple apps and will gain the confidence needed to continue. The child is drawn to the app, achieves a small success, and is ready to focus on subsequent tasks.

2. Video modeling

Video modeling consists of watching a video of a person performing a desired task, such as speaking isolated words or conversing with others. Video modeling has changed the face of speech therapy. Instead of looking at static pictures and listening to beginning syllables and words, children can now **watch** videos of others making the sounds and speaking the words. Some apps are focused on showing just the mouth, which helps children learn how to use their own lips, mouth and tongue to make noise. By repeatedly watching the videos, children can learn where the sound is coming from and that certain sounds come out when the tongue and lips move a certain way. Once children make this connection, they may become fixated on their parent's mouth more than usual. This type of video modeling won't necessarily teach them *how* to speak, but it is teaching them that this is where verbal sounds come from.

Video modeling can also be used in more advanced settings to show a child what a conversation looks like in different social situations.

Video self-modeling is extremely useful in all aspects of learning to communicate. Showing children a video of themselves being happy, running, or having a conversation can be very helpful. It is effective because children like watching themselves.

3. Using GIFs and videos instead of static pictures

Communication boards and spelling boards are typically used to help a child begin communicating with therapists and parents. These boards have a wide range of simple pictures and images that the child can point to in order to ask questions or make a request. While they can be helpful, they do have their limits. Although autism is a spectrum and each child is unique, many children are concrete thinkers and interpret everything in its most literal meaning possible. Many concepts in communication, however, are abstract. It is easy to understand that you would put a picture of an apple for an apple, or a picture of a shoe for a shoe. But how do you visually represent abstract ideas?

Consider, for example, how you would convey "want" or "yes" without using words. The typical image to represent "want" is a picture of two arms reaching out for something. Although *you* may understand that these hands are reaching out for a desired item, a concrete thinker might see just hands. The image represents hands and arms, not "want." Also, the image usually used to represent "yes" is a picture of a smile. However, the word "yes" is not always associated with something happy. What if you asked your child: "Did you go to the dentist today?" A smile may not be the most accurate response.

Communication apps, such as InnerVoice, can be used in these instances. They have an enormous advantage in being able to represent concepts through video or animation. For example, if you type in the word "run," you will instantly see twenty examples of running. Rather than showing just a static picture of a person running that may not capture the child's attention, you are showing the child a moving image of a person running. To make technology even more powerful, you could capture a moment of your own child running and record it as an example of video self-modeling. The child will be able to see himself/herself running when describing this action.

4. Teach children with autism to type

Handwriting can be a challenge for many children with autism. When they are required to write, their energy and focus may be on the physical skill instead of on communication. When children are able to type and use word prediction, their focus can remain on language and communication.

5. Conversations with artificial intelligence

Many children still struggle with effective communication even after they begin saying their first words and sentences. These children typically *want* to speak and converse,

Resources

Apps That Parents Can Use at Home

Any communication app that therapists and teachers are using can and should be used at home. Here are some of my favorites.

InnerVoice Smart Communication

InnerVoice combines artificial intelligence technology with facial expressions, emotions, tone-of-voice, written words and videos, and provides a complete multi-sensory learning experience.

InnerVoice Sender

A remote prompting tool that assists children in conversations.

First Words Kids Learn to Read

A spelling app that helps children learn their first words.

Touch and Write

A tracing app in which children can trace letters through whipped cream and other things.

LetterSchool – Learn to Write

This app teaches children how to write letters.

Shape Builder (Preschool and Educational)

A puzzle app that can be used to get a student's attention, it is an excellent starter app to help children learn how to isolate their finder, and drag and drop.

Monster At The End Of The Book

This app teaches children how to read.

VAST Pre-Speech Motor Planning / VAST Songs: Autism & Apraxia

These apps show videos of just a mouth either talking or singing.

but they often do not know what to say. Using technology can be very helpful in building social communication skills. Apple's Siri and Google's Alexa have been very useful in developing communication skills. Children can ask questions and will get an immediate response. Children initiate the process with a question, receive a reply and then need to consider an appropriate response. Similarly, the app InnerVoice has a feature called "chat bot." While it also involves a conversation with artificial intelligence, it takes the form of a written conversation. This is advantageous because it gives children the opportunity to see a visual representation of their conversation. They can take time to look at the response from the "chat bot," think about it, and respond appropriately.

6. Conversations with remote prompting

Having a conversation with another person can be intimidating and overwhelming. Technology provides the opportunity for an individual to have a conversation with a trusted caregiver nearby. If needed, the caregiver can give the child prompts through the mobile device. It is important, however, to not give too many prompts as the child may come to depend on them.

Additional Thoughts

Once children have the tools they need to have a conversation, it is important to allow them time to practice. Temple Grandin wisely advised that children need to be given enough language structure to "fill their bucket." Once the bucket is full, they will start to improvise and come up with their own ideas and responses. Some children fill their bucket quickly, and others take more time and repetition. Once their bucket is full, allow them time to practice having conversations with parents, teachers, therapists, and friends.

I would also add a word or two of caution. After learning how to use mobile devices, some children will become fixated on repeatedly opening and closing apps. They are searching for something. I recommend utilizing the "guided access" or "pinning" feature on any device you give a child. This feature can be used to disable the home button and prevent the user from switching to a different app. It will stop a child from flipping apps open and closed and potentially finding unwanted or dangerous information on unmonitored websites.

To Activate 'Guided Access' in iOS 13:

- 'Settings'
- 'Accessibility'
- 'Guided Access'
- Flip switch to On (tap 'set pass code')
You will need to use password to escape out of guided access mode

To Activate 'Screen Pinning' in Android OS:

- Go to the screen you want to pin
- Tap 'Overview'
- Swipe up to show the pin. You'll see it at the bottom right of your selected screen.
- Tap the pin

Any technology can easily turn into an obsession if not monitored correctly. I strongly suggest setting expectations about time duration before giving a child a mobile device. The apps are excellent tools to aid your child, but must be used in moderation. Visual timers, such as an egg timer, are excellent tools to give the child a clear indication of how much time is allowed.

There are many benefits to using technology to help build communication skills in children with autism. Not only is it more interactive and interesting for children, it is also an approach that is evidence-based.² When used appropriately, technology can be a powerful tool for children with autism.³ Our goal is to give children with autism as many resources as possible. As technology is changing all the time, make every effort to stay up-to-date with advances. Using the latest tools can help you ensure that your child achieves his/her full potential.

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Lois Jean Brady, MA, CCC-SLP, CAS, has over 25 years of experience as a practicing speech-language pathologist, assistive technology specialist and Certified Autism Specialist (CAS). Career accomplishments include winning three Autism Hackathons, the Benjamin Franklin Award for Apps for Autism, and an Ursula Award for Autism Today TV.
www.iTherapyLLC.com
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