

Closing The Gap

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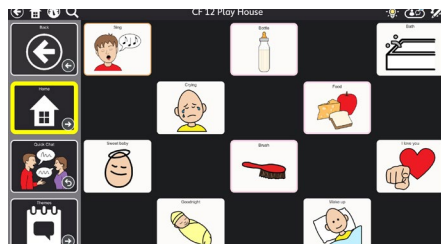
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contents

volume 45 | number 3

August / September, 2026

- 3 **Powered by Play: Using AI to Enrich AAC Communication**
By Kristen McManus and
Jessica McCoy



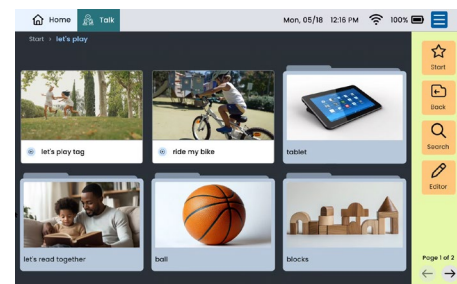
- 11 **The Early Days (The Story of LoganTech)**
By Glen Dobbs



- 20 **Rooted in Inclusion, Flourishing with AAC: Growing Communication-Rich Schools**
By Sara Ayars and Sarah Kinsella



- 32 **Neurodiversity-Affirming AAC in Practice Through Lingraphica Hub - From Values to Access, Implementation, and Impact**
By Sara Schneider and Beth McHose



- 42 **Supporting AAC Users Through Improved Interagency Collaboration**
By Suzanne Feinstein and Allisa Thompson
- 49 **We Built an AAC App in a Week: What Should We Do Next?**
By Haley Hager and Ashley Schoonover Haq

Powered by Play: Using AI to Enrich AAC Communication

Summary: AI is a fast-growing area in AAC that is changing the way people communicate. AI can be used to help generate activity specific phrases for the AAC device, build a road map to combine core words, and develop scripts for modeling AAC within play routines to engage and motivate AAC users and their support team. Learn key elements to prompt AI and explore case examples in which AI has been used to support AAC communication.

Artificial intelligence (AI) is quickly changing how the world works, including the assistive technology field. In the hectic health care and education settings, more productive time is expected and time for preparation is decreasing. This leaves very little time to prepare complex communication systems for AAC users. What if you could generate personalized communication phrases in minutes instead of hours using AI technology?

There are many ways that AI can help in the clinical or educational setting. A properly worded AI prompt can generate AAC phrases to improve the efficiency of the setup and use of AAC systems. AI can expand treatment ideas to incorporate the AAC device into therapy, school, or daily activities. Families and the support team can feel empowered to take a more active role in programming the AAC vocabulary. No matter how AI is used to increase efficiency with AAC implementation, play is still at the heart of learning and practicing communication.

Play is the primary occupation of a child and an activity that grows and evolves through adulthood. While there are a variety of forms of play, pretend play begins to emerge around 18 months through object substitution (pretending a block is a phone) and animation (putting animals to sleep in a barn). It grows throughout early childhood, with role play, elaborate play sequences, and scripts emerging as the child moves into the preschool years (Kizildere & Golksun, 2025; Paatsch et al., 2024).

Play is inherently fun, and children learn through novel and engaging activities. As such, pretend play is linked with the development of a variety of cognitive skills: enhanced working memory, inhibitory and listening skills, and cognitive flexibility as children engage with their play partners. Language development is also impacted by pretend play. Evidence links pretend play with significant increases in receptive language (how a child understands words) and expressive language (how a child expresses thoughts and ideas). Improvements in literacy



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BACK TO
CONTENTS

skills and pragmatic language are seen as children work together to create complex narratives with a variety of characters and conflicts. Because of these benefits, it is essential for all children to have equal access to pretend play, regardless of their method of communication. However, children who use AAC face many challenges participating fully with peers. AI offers a practical way to rapidly create the customized vocabulary that makes this level of play participation possible.

While access to AAC improves a person’s communication, (Golchin et al., 2024), fully participating in pretend play can still be particularly challenging. Pretend play often requires rapid communication as the scene evolves. For AAC users, they are often not able to participate in rapid back and forth communication with their peers, which slows down the play. While clinicians can train families and peers to provide wait time for a response, this may not be as closely followed in all real-world play experiences.

Availability of vocabulary for specific play routines can also present a challenge, especially as children move into more complex pretend scenarios. Having access to core and pre-programmed fringe vocabulary on the AAC system is extremely important, but if a child does not have access to characters, places, actions, and phrases that are a part of that often-imagined world, it can limit their experience. With access to only pre-programmed vocabulary, play can become repetitive and even boring.

This lack of customization can also impact a family’s “buy-in” to start modeling and using the AAC device in daily activities. Finding that magical, motivating play activity for a user is often the key to successfully incorporating AAC into everyday life. Vocabulary customization builds engagement, but it takes time and creativity to come up with alternatives. The joy on a non-speaking child’s face when you bring up details about their favorite characters is priceless and deepens the relationship and trust. With AI, a new generation of AAC users can have a personalized communication system displaying their special interests that was prepared in minutes. A quick prompt can open a world of possibilities for play.

THE JOURNEY BEGINS

The catalyst for this approach came from an unexpected source. This journey started with a required AI training and a first-grade girl who was obsessed with playing coffee shop. A quick search with the AI system to create AAC phrases for coffee shop play gave a comprehensive and engaging list of phrases. The suggestions included words and phrases that could be used with many aspects of play that would happen while running a pretend (or real) coffee shop. Beyond the traditional fringe vocabulary (coffee, mug, cream, sugar), it included interactions between the barista and customer when ordering, questions about preferences, words of caution while handling hot liquids, and phrases related to cleanup. The best part was that this took minutes to search and set up on her AAC device. She left the session armed with a personalized AAC page that was meaningful to her.

After that session, our research revealed only one article addressing AI use with AAC in this way. The article by Tucker and Hynes (2024) focused on using AI for AAC modeling with a cooking activity. The authors described the specific wording they used to help generate their support materials. This article formed the foundation we used to spread the word about the key elements of effective AI prompting for use with AAC devices.

THE FIVE KEY ELEMENTS

With research and experience implementing AI as a tool in our practice, we have come up with five key elements that are important to include in your prompt to help you get the best outcome (Refer to image 1). They include:

- 1. Describing who you are and what role you play with the AAC user
 - 2. Describing who you are working with
 - 3. Telling the AI system what you would like it to create
 - 4. During a specific type of activity
 - 5. Describing how you would like AI to organize the response
- Let’s go more in depth about what to include in each element.

KEY ELEMENT #1

Begin by referencing your relationship with the AAC user. Sample prompts might read:

- I am a speech therapist
- I am an occupational therapist
- I am a special education teacher
- I am a paraprofessional
- I am a parent or caregiver

The profession does not necessarily change what type of AAC

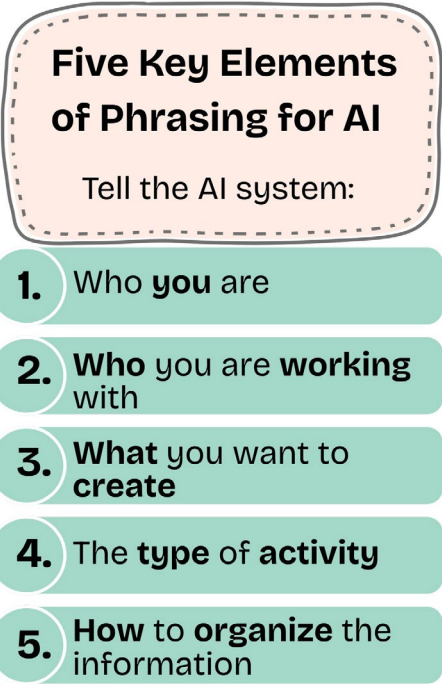


Image 1: The Five Key Elements.



phrases or modeling sentences are generated. For the most part, the responses were similar no matter the relationship. However, AI provided a few key insights and reminders when using AAC, such as the importance of autonomy, modeling strategies, encouraging all attempts at communication, and providing wait time for the user to respond. Your role can guide the insights that AI provides for how to implement the AAC phrases into your daily routine.

KEY ELEMENT #2

This element specifies information about the AAC user, including their age, gender, languages spoken, or diagnosis. Sample prompts might read:

- A four-year-old boy with a diagnosis of cerebral palsy
- A seven-year-old girl who is bilingual in Spanish and English
- An autistic five-year-old boy
 - **...with complex communication needs who uses augmentative and alternative communication (AAC)**

Outputs were not necessarily different based on medical diagnosis (i.e., cerebral palsy vs autism) but could change the implementation of insights provided at the end of the response. Age ended up being the most important factor to incorporate because the linguistic complexity of the AI-generated phrases changed based on age. The phrases for an 18-month-old were 1-2 words, focusing on early core words. For a preschooler, the phrases lengthened to 3-4 words or longer based on the request. What is most important is to state that they are “an AAC user with complex communication needs.” This will inform the AI system that the child is using a speech generating device instead of producing natural verbalized speech. If stated that a user is bilingual, phrases are generated in both languages. Remember to review the phrases in the other language with the family to ensure accuracy.

KEY ELEMENT #3

The next element of the prompt describes what should be generated. At this stage, specify whether phrases, sentences, core words, fringe words, or a modeling script are desired. Requests can be as specific or general as needed based on what you hope to achieve. Sample prompts might read:

- *Create a modeling script to implement aided language stimulation*
- *Compile a list of activity-specific core words*
- *Develop fun and age-appropriate phrases and sentences*
- *Develop creative and complex sentences*

To note, the use of the words “fun” and “creative” yielded similar results. It was the use of “complex” vs “age-appropriate” that had very different outcomes. “Age-appropriate” suggestions for toddlers and young preschoolers gave basic responses with 1-3 words phrases. Requests for “complex” sentences often provided much longer sentences, comments and questions to fuel more

creative pretend play.

KEY ELEMENT #4

The next element explains what type of activity will be conducted. What is included in this part will define the response. A generic request for toddler or preschool pretend play featured a variety of common play activities (e.g. baby dolls, cars and trucks, and balls). Asking for specific pretend play, such as farmer’s market or bakery, tailored the content to a variety of categories related to that play routine. The more specific the request, the better the results. Some prompts might read:

- *Farmer’s market, with phrases for the farmer or grocer*
- *Bakery play, including cupcakes and cookies, with phrases for the baker and customer*
- *Coffee cart, with phrases for preparation, selling, and clean up*
- *Paw Patrol play, including catch phrases*
- *Social phrases for Gen Z*

KEY ELEMENT #5

Lastly, describe how AI should set up the response. During our practice, AI often included only three responses per category. When more phrases are desired, specifically ask for the number of responses wanted. When specifying which core words to include, request that those words are highlighted in each phrase for easier viewing. Prompts could include:

- *How many phrases per category*
- *Model these specific core words*
- *Separate core and fringe vocabulary*
- *Emphasize core words in a modeling script for aided language stimulation.*

BEST PRACTICES FOR WRITING AI PROMPTS

By intentionally including these five key elements in your AI prompt, you can generate higher-quality outputs that more effectively support communication, participation, and engagement in everyday routines. Strong prompts give AI a clear understanding of the user, the communication goal, the environment or activity, and the desired output format. The more specific the information provided, the more functional and individualized the response will be.

Effective prompts are both direct and detailed. Because AI responds to explicit instructions, clarity and specificity will consistently produce more meaningful, age-appropriate, and clinically useful communication supports.

It is also important to remember that prompt-writing is a skill that improves with practice. Small adjustments in wording can noticeably change the quality of the output. If the first response is not quite right, revise the prompt by adding clarification, changing the format, or specifying additional expectations.

When you discover a prompt that consistently produces useful results, save the wording as a template in your files to use in the



future. Over time, your templates can become valuable clinical tools for creating customized communication supports quickly and effectively.

CASE REPORTS: PUTTING THE KEY ELEMENTS INTO PRACTICE

Once the AAC device is personalized, the next step is implementing it into daily life and helping the user understand how to use it. The following case examples illustrate how AI-generated vocabulary can support more meaningful, autonomous, and socially engaging communication opportunities for AAC users across play and leisure activities. By combining individualized interests with thoughtfully designed phrases, AI helped create motivating language opportunities that reflect each user’s personality, communication goals, and daily experiences.

BAKERY PLAY

In the first case report, meet Valentina, a 4-year-old girl diagnosed with cerebral palsy and complex communication

needs. She uses a ProSlate 10DTM, mounted to her wheelchair, with Touch Chat with Word Power 42 accessed via direct selection (Refer to image 2). Valentina loves to engage her family and peers in dramatic play with dolls, kitchen and cooking, and community settings. She has strong opinions and can refuse to use her AAC device if it is not supporting her communication. When the vocabulary is fun and motivating, she can navigate multiple pages to find the right words while playing.

A bakery was set up for pretend play in our early childhood therapy room, complete with a kitchen and sales counter. Valentina’s therapists used the key elements to prompt the AI chatbot to provide ‘fun and complex’ phrases for pretend play in a bakery (The prompt is included in image 3). The output included fun greetings, cute comments, and creative questions she could ask as both the baker and customer, expanding the types of communication functions she typically used in her play. The pageset was customized in a matter of minutes to what Valentina said were her preferred AI-generated phrases and, of course, her favorite flavors and cookies. The pageset was placed under the



Image 2: A screenshot of the AAC app Touch Chat with the Word Power 42 pageset showing phrases for bakery pretend play.

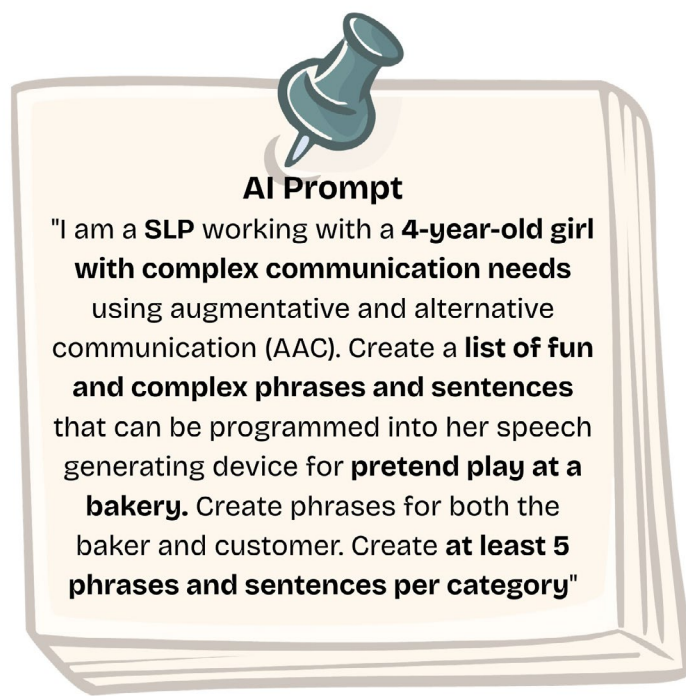


Image 3: AI prompt to generate AAC phrases for bakery play.

group "Imagine" in Word Power, in a button labeled "bakery". It was linked to a template page containing her customized vocabulary.

As Valentina learned and used the pageset in the bakery, the therapists became keenly aware that she was able to respond and take control of the play routine more quickly and clearly. In one interaction, the therapists misinterpreted Valentina's response when her play partner asked for a specific cookie. They took control and started to guide the play in the direction they wanted. But Valentina used the AI-generated phrases to clarify that she, as the baker, recommended and wanted to give a different cookie to her play partner. This was all done in a matter of seconds, and the play routine was able to naturally continue. Instead of becoming a frustrating interaction that could have led Valentina to shut down, a smile appeared on her face as she realized her message was understood.

As clinicians, we tend to want to guide play, especially with children who have complex communication needs. The creative, phrase-based vocabulary provided by AI supported the clarity of her message, increased the speed of turn-taking, and kept the interactions going. The therapists could then follow her lead, which is a more meaningful therapeutic strategy.

BABY DOLL PLAY

In the second case report, meet Eva, a 4-year-old with cerebral palsy and complex communication needs. She uses eye gaze to control her Tobii Dynavox communication device. Though she loves playing with peers, physical and communication barriers make interaction difficult. Based on the AI prompt requesting baby care phrases for preschool play, her team populated Eva's

talker with fun phrases to take care of her baby doll's needs (The prompt is included in image 4). In minutes, her modified TD Snap Gateway pageset included AI-generated phrases accessible from the baby doll button on her activities page (Refer to image 5). With assistance from an adult to navigate to the page, Eva quickly explored how she could use these new phrases to take an active role in her play despite the challenges.

The impact became clear during one therapy session. In the early childhood therapy program, Eva and the occupational therapist began playing with baby dolls, allowing her to practice with her new AAC page while working on her grasp. Seeing the fun she was having, a few of the other children naturally gravitated over with interest. Each child, including Eva, had a choice about what they wanted to do with the baby doll. As the occupational therapist modeled on the communication device, Eva had other thoughts - she wanted to brush the baby's hair. She made her own choice which brought a big smile to her face as she was able to do what she wanted to do.

Practice with her AAC device was carried over in many of her therapies. It became apparent that the use of this expanded pageset in a variety of settings had far-reaching benefits. Even while practicing her fine motor skills during occupational therapy, she was able to communicate within the real play activity. Before having access to the new AI-generated phrases on her AAC device, she was reliant on a caregiver to give her access to the play materials. Instead, Eva gained autonomy in her play that she never had before.

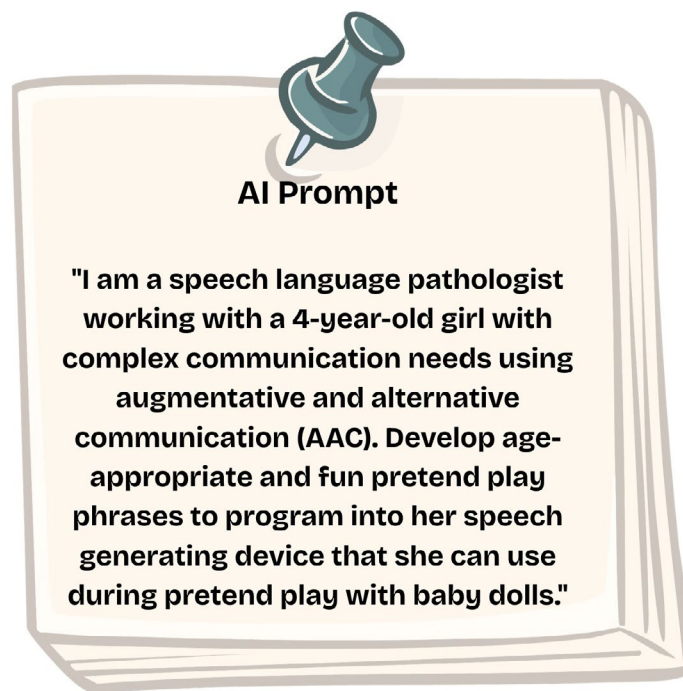


Image 4: AI prompt to generate AAC phrases for baby doll play.

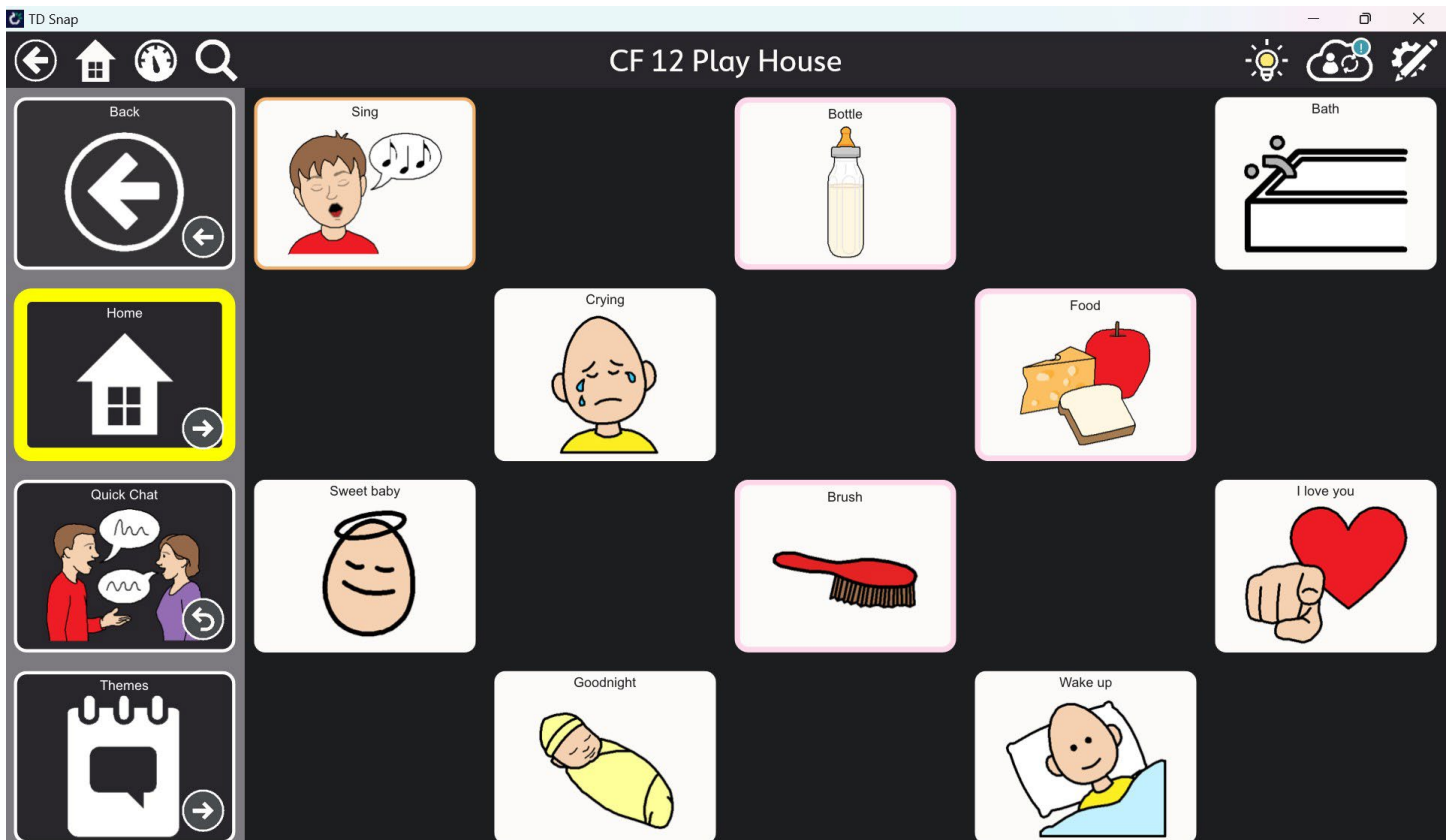


Image 5: A screenshot of the AAC app TD Snap Gateway pageset showing phrases for baby doll pretend play.



Image 6: A screenshot of the AAC app TD Snap with a custom pageset showing social phrases that Gen Z is using.

TEENAGE SOCIAL SCENE

In the final case report, meet Brandon, a 22-year-old with quadriplegia and complex communication needs. He uses auditory scanning via a switch to access his TD Snap Express pageset on his Tobii Dynavox speech generating device (Refer to image 6). He enjoys gaming, movies, and going to festivals with his family and friends. As a member of Gen Z, he wanted some vocabulary updates that would help him communicate more naturally with his peers in social situations.

Play evolves as a person grows, from childhood pretend scenarios to adult leisure activities that continue throughout the lifespan. Not only do the play scenarios change, but the language used and lexicon of the individual change as well. Since the therapists were from a different generation and used different expressions, they prompted AI to suggest phrases that Brandon could use to communicate with his peers during his favorite leisure routines (The prompt is included in image 7). After the ideas were generated by AI, Brandon actively engaged with the therapists in choosing which phrases he wanted for his vocabulary. He quickly created a customized page that incorporated Gen Z lingo, showing off his personality. He and his family also had a list of additional phrases that they took home in case they decided to add more phrases to his device during the week.

Over the next several weeks, the therapists noticed that Brandon's engagement with his device improved significantly. With the addition of motivating, personalized phrases, Brandon's timing for his switch access improved. He became more interactive with peers in his group, and the group was able to experience Brandon's great sense of humor. After the AI system provided

Brandon's phrases, it provided insights into AAC best practices, including "lifespan, autonomy, and identity: program vocabulary that reflects the user's vocabulary and identity." AAC systems should reflect the interests, leisure, and social routines of the user, no matter their age. AI can give therapists and families the ability to program in the lexicon of a new generation with ease.

MOVING BEYOND PROGRAMMING THE AAC DEVICE: MODELING SCRIPTS

The case reports focused on pre-programmed phrases related to each play activity, but the learning doesn't stop there. Beyond adding the new play phrases, AI can also create modeling scripts to empower the AAC user's support team to implement the device in all their daily activities. For modeling scripts, AI prompts can be structured in one of two ways. One approach is that the prompt can request general recommendations for core or fringe words that can be modeled during routines. The chatbot will recommend the word and then, if prompted, will provide a specific number of creative phrases in which the word can be utilized in the activity. This strategy can be an excellent starting point for family members who may need ideas regarding which words they might target in daily routines.

The second approach is to request a modeling script that contains specific recommendations for core or fringe words that the team is targeting in their current goals for the child. As an example, the therapists in our early childhood program wanted to create a modeling script for a 5-year-old boy with cerebral palsy who was working on using the words in, on, and off. The team used the key elements to request five creative phrases containing these targeted words from the AI system within a preferred cooking activity. They even took a photograph of the toy and shared it with the AI system to make sure it was only creating phrases about available objects. The chatbot then provided unique and creative ideas for phrases that the support team could use in their modeling, while keeping play fresh and fun.

AI can be an efficient tool to develop modeling scripts in minutes, building the confidence of those without a background in AAC and assistive technology. These scripts can incorporate a multitude of ideas within a single activity, allowing focus on a small set of target words for the entire session, without sacrificing engagement or enjoyment. AI-generated scripts provide valuable reminders of the many ways language can be modeled effectively.

CONCLUSION

Each AAC user is unique and deserves a vocabulary that fits their own personality and style of speaking. AI is a powerful resource in our toolbox, enabling more efficient production of personalized phrases for AAC users. We are only at the precipice of discovering the limitless ways that AI can support our clinical practice. We pose this challenge to you: Try creating an AI prompt using the key elements with one student or one AAC user and see where it takes you. Then, share what you learn with your

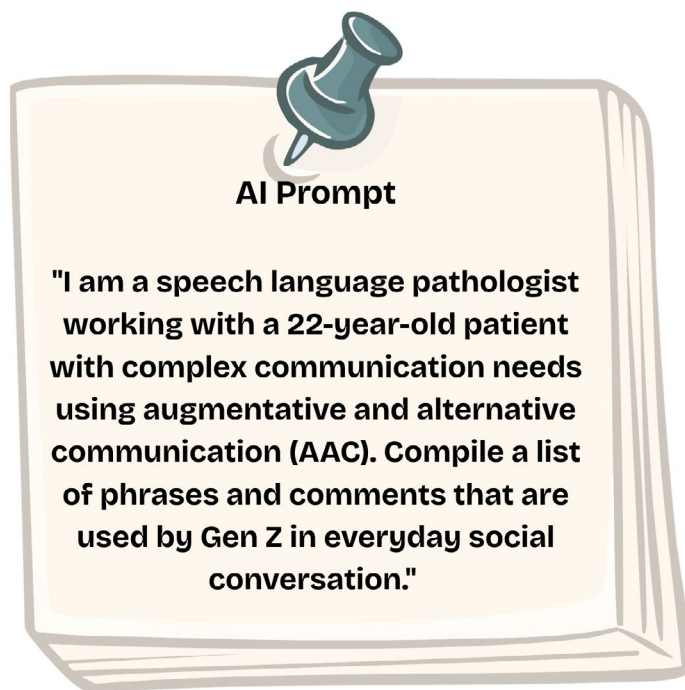


Image 7: AI prompt to generate AAC phrases for Gen Z social conversation

colleagues and families to inspire greater change.

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The Early Days

(The Story of LoganTech)



GLEN DOBBS is an engineer, entrepreneur, and the founder and CEO of LoganTech (and its recently acquired division, *Adaptation*), a leading manufacturer of rugged assistive technology and AAC (Augmentative and Alternative Communication) devices.

Originally trained in physics and automotive engineering—where he led university teams in building solar-electric racing vehicles—Glen completely shifted his career path following the diagnosis of his son, Logan, who has severe autism and verbal apraxia. Motivated by the urgent need to give his nonverbal son a voice and a durable means of communication, Glen combined his engineering expertise with his firsthand experience as a parent to invent the ProxTalker - the first rugged, tactile move-to-talk speech-generating device.

For nearly two decades, Glen has been a prominent voice and innovator in the assistive technology industry, specializing in creating heavy-duty, highly accessible hardware, communication apps, and protective tablet cases designed to withstand the rigors of intense behavioral and physical needs. Today, he operates LoganTech out of Florida, continuing his mission to bridge communication gaps for individuals with complex disabilities nationwide.

Summary: This article outlines the foundational history of LoganTech, told through the deeply personal lens of its founder's journey raising his nonverbal, autistic son, Logan. Driven by the critical need to give his severely apraxia-impacted son a voice and a durable way to communicate, the author transitioned from an engineering background into the assistive technology sector, ultimately inventing the groundbreaking ProxTalker and building a company dedicated to rugged AAC solutions.

Back in the mid-1990s, I was living in a one-bedroom apartment in Cheshire, Connecticut, with my wife, Kristi, and our one-year-old daughter, working as a mechanic. I was still in the process of finishing up my degree in physics. I had led several college-based teams to develop and build electric vehicles for racing in the American Tour de Sol Solar Electric races, which went through several states. The race showcased the latest technologies by having engineering teams from universities around the US - and occasionally around the world - conduct a road rally each day, making stops in places like Quincy Market in Boston and the base of the World Trade Center in New York City.

I was hoping to someday move to California, where there was potential to use my skills to help change the world by developing electric vehicles. I was an avid environmentalist, and I hoped to help make the world a better place through technological advances. While the goal of making the world a better place was to eventually play out, it did so in a rather unexpected way.

I learned that our second child was on his way. As we were living in a one-bedroom apartment and sleeping on the couch while our young daughter enjoyed the bedroom, I thought it was a good time to cut my long hair and get a job. While being a mechanic is certainly a career that many people take to retirement, I was hoping to get an engineering job, as I thought it would be something I would enjoy and lead us to a higher degree of prosperity. I applied and was hired by a company called Locknetics in Bristol, Connecticut.

Locknetics manufactured magnetic locks and card access control systems - the types of systems that control access to businesses, universities, hospitals, and so forth. I was hired as a sales engineer. I worked with every department in the company of 125 people and learned how to get people with different agendas and responsibilities to cooperate so that we could better serve our sales force and customers with our technical products. It was a fun job, and every day was different.

Soon, our son Logan was born. Logan was a big baby, weighing in at 11 pounds, 1 ounce. The birth was difficult and almost required a C-section, but an oxygen monitor screwed into Logan's scalp let us know he was doing OK. Kristi was a trooper. She had given birth to our daughter all-natural, and she was plowing through this long, drawn-out delivery all-natural this time as well. Eventually, after about 24 hours of labor, Logan was finally born. He was just fine. The doctor said to Kristi, "You just gave birth to a toddler!" I cut the cord, and we enjoyed our first days with him.

All seemed well for the first year. Kristi went back to work and continued taking college classes while I worked at Locknetics. I had received two promotions to technical writer, and I had begun working in the new product development department as a senior applications engineer, developing customized solutions for the special needs of our customers. This was a lot of fun, and it allowed me to tap into my creativity and learn dimensions of electrical, mechanical, and software development. It was then that things started going a bit off the rails at home.

Logan was about a year and a half old at this point, and while he had hit all the milestones in some ways, his very early speech began to disappear. He had attained the ability to say a few words like "doggie," "kitty," "Mommy," and others, but he lost that ability seemingly in a few months. At the same time, he started to exhibit a faraway gaze and began to have severe behaviors in excess of what a typical one-and-a-half-year-old child would have. I told Kristi it must be because he was a boy and he'd grow out of it. Kristi sensed something different.

Our doctor informed us about the Birth to Three Program, which is the early intervention program for the State of Connecticut. This is a federally funded program that helps track kids identified early by their physicians as potentially having special needs, helping get them appropriate support. This also serves to connect them with appropriate preschool programs that specialize in these needs.

Logan and our daughter began to attend a preschool in Woodbury, Connecticut, where Kristi's mother lived. We hoped to eventually move there. The school was a really nice place, but Logan's behavior escalated, and containing Logan was very challenging. In fact, Logan had escaped several times into the parking lot despite great measures being taken to prevent it. In addition, he began exhibiting self-injurious behaviors, including self-biting and self-hitting.

Logan was still nonverbal, and his inability to communicate was certainly causing a lot of frustration. Kristi and his teachers had given Logan some limited sign language approximations that included "bathroom," "eat," "drink," and very importantly, "all done." The school was using an ABA (applied behavior analysis) approach, which included extensive discrete trial training, and Logan was receiving food reinforcers - in many cases, candy or other sweet treats.

In the Birth to Three Program, Logan was receiving physical therapy, occupational therapy, and speech therapy. We had a meeting with the speech therapist, during which she said, "Logan has severe apraxia of speech. In my thirty years of

experience, I have seen kids with this level of apraxia never learn to talk. I suggest we get Logan on the PECS system right away.”

I couldn’t believe what I was hearing. I could not imagine that this kid who could run faster than anyone, climb over any wall in seconds, and outmaneuver the fastest teacher (or parent) might never be able to talk. He didn’t look like he had anything “wrong” with him. I had a hard time processing this. I fired back at the speech therapist, “Isn’t that the system that uses a book with little pictures with Velcro dots on it to talk?”

“Yes,” she said.

I snapped, “Well, I’m not going to have my kid using little pictures to communicate. That’s a cop-out. You’re a speech therapist. Teach him to talk!”

I was flaming. Kristi was looking disappointed. I could not imagine a future where my son could not talk. I could not believe that the speech therapist didn’t think she could “make” him talk somehow. I thought she was being lazy or didn’t want to bother. I thought we should go elsewhere. Clearly, she was doing a fantastic job of holding back her thoughts, but at the time, I could not see that.

After waiting almost a year to get an appointment, we went to Yale to see if we could find some answers. I still held the opinion that Logan would grow out of it. After all, he was a boy, and boys take longer to mature than girls, right? Thanks to the hard work of one of Logan’s teachers, Anne Taff, as well as Kristi, Logan had made good progress using PECS. In fact, PECS had become his primary form of communication, coupled with some signs and gestures. He would also lead you to what he wanted if you allowed him. In spite of this progress, Logan had grown, and his behaviors began to be extremely difficult to manage - to the point of being dangerous occasionally.

He would unbuckle his seat belt in the car and start to open the windows or the door. We usually had one adult in the back seat with him, but if we were alone, we began to have him sit in the front seat, which was technically inappropriate due to his weight. We had to choose between safety in an accident and safety with respect to falling out of a moving car. This was the first step in a series of steps that led down a path to what I would call an impossible situation.

It became time to choose a primary school for Logan. Kristi had been researching the available private and public schools in the area, as she was very concerned that the local grammar school where Logan’s sister was going would not be able to keep him safe from eloping. He had proven that his skills at escaping required a very tightly controlled environment. This, coupled with his tendency for self-injurious behavior and his new behavior of biting other people when they tried to contain him, was a great concern in a “typical” school environment. The special education director of the local school assured us that this would work, as did the leadership of the preschool.

The day came to visit the potential new school: Mitchell Elementary School in Woodbury, Connecticut, where we

now lived. The head teacher of the preschool and the special education director of Mitchell Elementary were showing us the area where Logan would spend much of his time in a breakout environment, where he would be mostly one-on-one with a para. Logan was struggling to escape the grasp of his old lead teacher, bit her solidly on the hand, and she started bleeding. He ran down the hall, and we all had to chase him before finally catching him. The teacher had to go get first aid. This concluded any confidence in their ability to handle Logan easily, and the door opened for potential outplacement to other schools that specialized in kids like Logan.

We wound up going to our first choice, a place in Orange, Connecticut, called “The Foundation School.” This school was headed by a very experienced SLP and specialized in developing speech in kids who had apraxia and were using PECS. Kristi and I hoped that this change in programming (they did not use ABA) would be helpful. In addition, they used physical prompting with parts of the mouth using tools and other methods to help evoke speech output from the kids. Logan was actually very happy there. He did improve some verbal approximations, but not to any great extent. He maintained the use of PECS, which remained his primary communication method. All this was good news, but unfortunately, Logan’s behaviors in class proved to be too disruptive for the school, and it was decided that coming back for first grade was not the right choice. We were advised toward the end of the year that we should look for other options.

Logan wound up at a State of Connecticut public school called CREC Coltsville. This was a public school that took the more challenging behavioral kids who required outplacement. It was an ABA program and used PECS. It was a very well-secured facility with delayed-egress magnetic locks similar to what you might find on maternity or dementia wards. These are locks that allow a person out after 30 seconds (delayed egress) but set off an alarm during that time. In spite of these technologies, Logan was able to escape the facility. If I recall, he went right out the front door. He was caught safely and brought back.

The ride from our house in Woodbury was about 1 hour and 15 minutes on a good day. On a snowy day, it might be almost two hours. Initially, Logan did not have an aide on the bus, and he was a handful. He managed to unbuckle a number of times, and the bus driver had to pull over on the highway to try to convince him to stay buckled in his seat. After a while, and after much heated argument with our local school district (which was funding this outplacement), we managed to get an aide on the bus. This helped greatly and made for a significantly safer ride for Logan.

Time went on, and Logan got bigger. The scene at our home was deteriorating rapidly due to Logan’s tendency to stay up all night and tear up the house. He tended to empty the refrigerator, flip over furniture, destroy any books or magazines lying around into shreds of paper, break anything that could be broken, and he was forever attempting to get out of the house - even on the

coldest, snowiest nights without adequate clothing to be safe outside for any period of time. We installed locks and alarms on the doors to warn us if he left the house. The television was placed in the now-finished basement along with any furniture worthy of being sat on. The dining room chairs were cracked and broken due to high-impact blows onto the floor as he flipped them. Logan's older sister had to lock herself in her room to avoid being caught up in the melee occurring in all parts of the house just about every hour, including hours when most people were sleeping.

Logan learned how to kick through locked doors, remove sheetrock, and eat the cotton candy insulation in the walls. We had to bolster his room by adding plywood to the walls and encasing the ceiling lamp and baseboard hot water heaters with wood and metal enclosures to prevent them from being destroyed. We put half-inch polycarbonate (Plexiglas) over the windows in the entire house since he had been putting his head through the glass.

Kristi and I began to discuss the concept of residential placement. She was squarely against it at first; I was squarely for it. I thought our oldest daughter's life was being adversely affected by the way Logan was behaving - nobody would come over, and we could not participate in normal activities as a family. Pretty much only one parent at a time was available to each kid, and most of the time, both parents were attending to Logan.

(And you can bet that there are a number of details I am intentionally leaving out due to writing for a broad audience.)

At one point, Kristi came home and told me she was beginning to realize that residential placement was something we might need to look into. Since we had been putting Logan in the front seat so he could not get out of his seat and open the window or door (not all our cars had child locks at that time), Logan had the ability to interact with the driver. One time while Kristi was driving, Logan grabbed the steering wheel and almost sent the car into a head-on collision. Kristi was fortunately able to wrestle control back. She told me that we were reaching a point where our wanting to keep him at home was putting other people and families at potential risk, and this was not acceptable.

All this time, we were imploring the State of Connecticut Department of Developmental Services to help find and provide support at home. At that time, no ABA services were normally provided by medical insurance, and the infrastructure we have for autism services did not exist in the form we have now - in most places, anyway. The state had a few vendors that provided workers who would show up about 50% of the time. Of those who did show up, most were not physically fit or attentive enough to be of much help. In fact, Logan escaped from all except one of these workers. In addition, we hired a few very good people privately. Those individuals wound up being very helpful over several years, and we remain family friends with one today. He wound up pursuing a career in managing group homes in Connecticut.

Our focus turned to identifying potential residential schools that might be in a position to safely house Logan while providing a high-quality program. We looked at all the programs in Connecticut, but none were in a position to handle Logan. There were a few in Massachusetts that looked promising. We visited several. Of those, there was only one that seemed to possess the ability to handle Logan physically while offering a high-quality program: the New England Center for Children (NECC) located in Southborough, Massachusetts. It was a strict ABA program with a staff entirely comprised of graduate students working on their master's degrees from several universities in the Boston area. We were very excited that we had found the right place.

After touring and completing our interview, Kristi asked the admissions representative what she thought our chances of being accepted were. The admissions officer said about 1 in 20 or 30 applicants get accepted. "The hardest part of this job is looking at the big pile of applications that I have to call and tell that they did not get in," she said. Our hearts sank, and we drove the three hours home with a gut-wrenching feeling about our family's future.

A few weeks later, we got word that Logan's application was accepted. We were thrilled. Logan spent the following twelve years there. He was 8 years old at the time of his admission. Ponder that: we had just signed our 8-year-old up for residential placement. We felt we had no choice. During his tenure at NECC, Logan required several emergency room visits due to self-injurious behavior, including self-biting and smashing his head into walls, door frames, and the floor. NECC was licensed to have a padded room with magnetic locks to keep a resident safe inside. A staff member was required to continuously hold the button and observe the resident inside through a small window on the door. I am sure this may sound like harsh treatment to an outsider - we thought so too. While it was true that Logan was self-injurious, the corollary was that it was very easy for others to get hurt trying to stop him. At NECC, they had a rule that Logan required no fewer than three people whenever he needed to be put in a hold. (If you are unfamiliar with the term "hold," it refers to an intervention where staff members step in to keep a resident safe from themselves or keep themselves safe from the resident.) The rule for Logan to have three staff members was based on his size, strength, and behavior. Logan had sent several staff members to the hospital for various injuries that occurred during holds. While Logan was not one to maliciously attack staff, during his self-injurious episodes, he would inadvertently (or reactively) harm staff by biting, headbutting, pulling hair, or pinching. It was a constant battle.

When Logan entered NECC, he did so using PECS and a limited number of modified signs. By the time he was 11 years old, we had finally built the first "Logan" ProxTalker and brought it up to Boston to show him. The first time he got his hands on it was in the car on the way to Wendy's for lunch. I handed it to him and showed him that he could place one of the sound tags on it



Logan with the first production prototype ProxTalker ordering his food at Wendy's for the first time.



Logan was asking to put salt in his milkshake!

and press it. He immediately got excited and started pressing all the different tags in the binder. He was able to say "go for a ride" and "to Wendy's." It was amazing, and he got so excited that HE could SAY things!

Our first trip was to Wendy's, as he had requested. When we went inside and reached the front of the line, Logan placed his ProxTalker on the counter, opened up the binder, and placed the icons "I want," "to eat," and "cheeseburger." The cashier understood him and confirmed, "You want a cheeseburger?" Logan nodded "yes" and started jumping up and down with glee.

It was incredible to see Logan actually talk verbally through a device for the first time. It was also wonderful that he didn't have to hand a physical PECS symbol to the cashier, which had usually created an awkward interaction since the person behind the counter was rarely expecting something to be handed to them.



YouTube Video - Build Sentences with AAC using a Logan ProxTalker.

https://www.youtube.com/watch?v=I7tQB_koLKE



Logan enjoying a lobster roll in New England.



Logan and Dad enjoying Hibachi at a Japanese restaurant.



Logan and Dad on a jet ski in Florida.



Logan's younger sister Holly giving him a hug at his birthday party.

Logan mastered the ProxTalker almost immediately because of how proficient he had become with PECS. The major difference was that he could produce actual speech output and was no longer required to physically touch or hand something to his communication partner. He was SO ready for this, and it was a massive success.

Logan went on to use the ProxTalker for several years. We kept adding pages to his binder and even created specialized binders for different activities, including one specifically for visiting Walt

Disney World, which we did several times.

Logan was still very rough on the ProxTalker. He even threw it out of a car window once while a staff member was driving him to the store! A kind truck driver retrieved it, caught up with the van, and returned it completely undamaged. Another time at Disney World, Logan threw the ProxTalker into the Kali River Rapids ride water, and luckily I was able to fish it out. Having been designed to be water-resistant, it worked completely fine.

After about four and a half years of use, I noticed that Logan had developed a very large vocabulary, and I wanted him to transition to a dynamic screen device. I had always been a fan of Minspeak (now LAMP), as I had gotten to know several people who used that language system and considered it a very fast way to use AAC. We had a PRC representative do an evaluation with Logan, but it turned out he wasn't quite ready for that specific system, and supporting it given his behavioral challenges would have been difficult in his environment. I then brought in a Saltillo representative to work with Logan (at that time, PRC and Saltillo were separate companies). Logan took to the Alt Chat immediately, which was the predecessor to the NovaChat. Logan received an Alt Chat loaded with TouchChat software, and we customized it to include his existing vocabulary plus many new words to choose from.

Logan now uses TouchChat on an iPad mini paired with a LoganTech Zephyr case. He is still a relatively basic AAC user, but he has access to a wide range of vocabulary.

I always like to emphasize that no matter what form of AAC you use, it is critical to consider the multiple modes of normal human communication. This includes gestures, facial expressions, vocalizations, sign language, and pointing. It is



Logan and Dad doing Eskimo Kisses in the ocean.

equally important to consider alternative tools alongside the primary AAC device itself.

One thing we regularly do with Logan when visiting a restaurant is pull up the Yelp app to show him photos of the actual food offered at that specific venue. This allows Logan to see a wide visual menu of available choices, which helps him choose what is actually available rather than relying strictly on the limited items programmed into his device. Effective communication is always a careful balance of using whatever tools are at your disposal to express wants and needs.

Logan now lives in an adult residential placement in Wauchula, Florida - a rural town about an hour east of Sarasota surrounded by cattle ranches, citrus groves, and phosphate mines. We moved nearby a few years ago. We see Logan nearly every week and often take him out on the boat, to waterfront restaurants, and to tiki bars (sans alcohol, of course!). Logan is enjoying the mild weather, the laid-back atmosphere of central Florida, and easy access to Gulf beaches and his family. He continues to use his TouchChat app on the LoganTech Zephyr Case with an iPad mini. It has been a long road, but a truly rewarding one.

To learn more about LoganTech, visit our website at www.logantech.com. LoganTech recently acquired Adaptation; you can explore their line of products at www.adaptation.com. Please feel free to reach out and follow us on social media! ■



Logan using the ProxTalker at the beach.



BACK TO
CONTENTS

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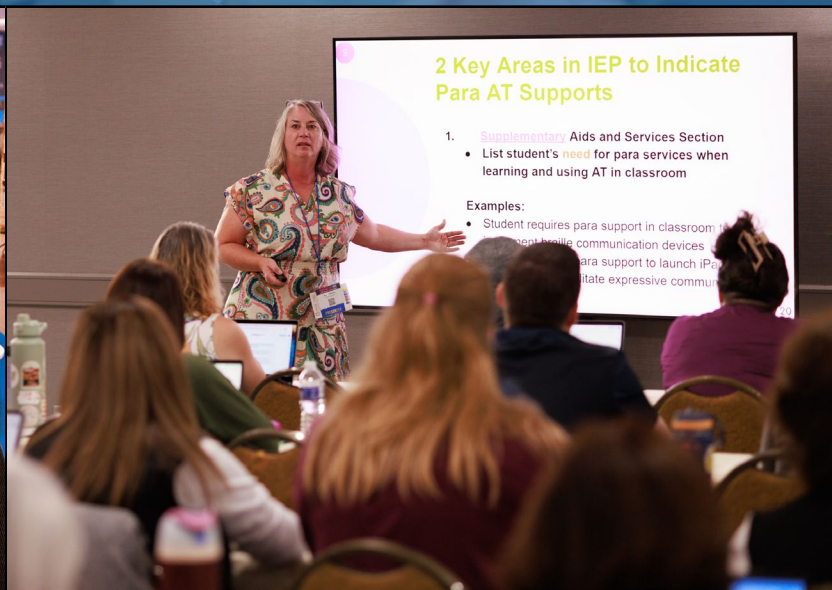
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Rooted in Inclusion, Flourishing with AAC: Growing Communication-Rich Schools

Summary: Using the metaphor of a thriving garden, this article will explore how schools can cultivate AAC-affirming cultures where every student is recognized as a communicator. Readers will examine practical strategies related to school-wide beliefs, inclusive environments, peer relationships, leadership, coaching, and thoughtful uses of AI. Real-world examples will illustrate how communication supports can be woven into everyday learning to foster greater participation, belonging, and opportunity for all learners.

"When a flower doesn't bloom, you fix the environment in which it grows, not the flower." Often attributed to author and educator Alexander Den Heijer, this quote captures a profound truth about inclusive education. Too often, schools have approached disability and communication differences through a deficit lens, focusing on how to change the child rather than the environment surrounding them. But communication does not flourish through compliance, correction, or isolation. It develops in environments where students feel connected, included, and able to communicate in ways that work for them. At its heart, AAC is not simply about communication supports. It is about belonging.

Over the years, we have watched students spend entire school days surrounded by people yet still have few meaningful ways to express themselves. We have also watched classrooms transform when communication became more visible, shared,

and accessible to everyone. An Augmentative Alternative Communication (AAC)-affirming school is much like a thriving garden. It flourishes when the conditions for growth are intentionally created: shared beliefs, accessible supports, meaningful opportunities for interaction, and educators working together to nurture communication throughout the school day.

In every school, there are students who resemble dandelions: resilient communicators who seem able to grow in almost any environment. But there are also orchids: students whose communication emerges most fully when environments are intentionally designed to support it. These are students whose communication and participation flourish when AAC, sensory supports, regulation strategies, visual systems, and responsive communication partners are intentionally available.

This article grows from years of school-based practice, collaboration with educators and families, and evidence-



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SARAH KINSELLA is a Speech-Language Pathologist (SLP) passionate about empowering students with complex communication and learning needs through Augmentative and Alternative Communication (AAC). Sarah has provided support and training to children (birth-21), their families and educators in WA state for two decades. She currently works for the [Special Education Technology Center](#) where in addition to providing technical assistance and training, Sarah also co-hosts the "[Awe and Wonder AAC & AT Podcast](#)". Sarah's commitment to her field is fueled by the continuous learning and growth she experiences through her work with students and families. She is deeply grateful for the opportunity to support their communication journeys.

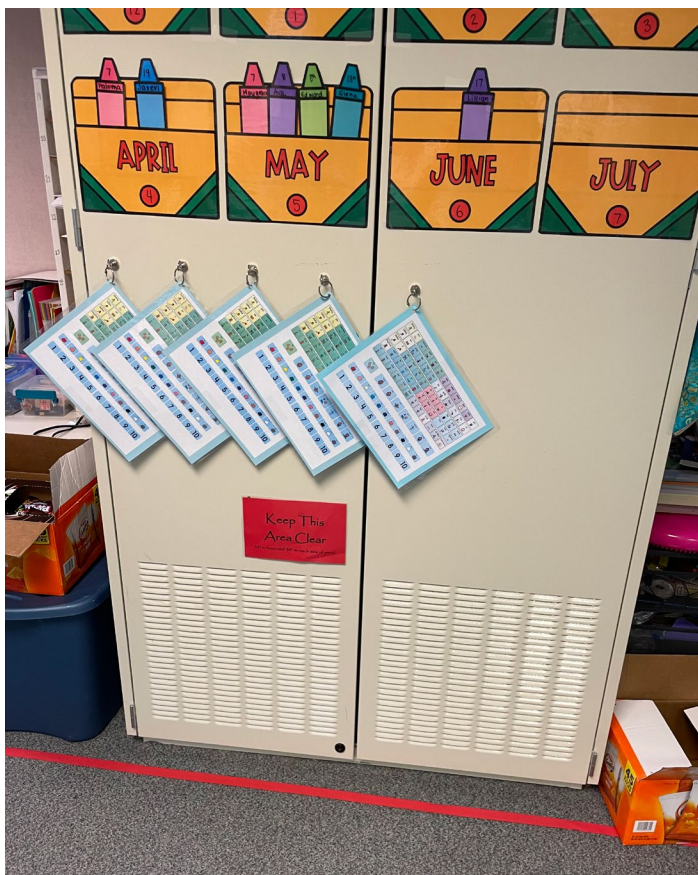


Photo 1 - Low-tech core vocabulary boards are integrated into this kindergarten classroom.

based approaches. It offers educators a practical roadmap for building communication-rich, AAC-affirming school cultures. Rather than treating AAC as something reserved for only a small group of students, we invite readers to imagine schools where communication supports are woven naturally into everyday learning. (Photo 1) When we create schools designed to support

our orchids, the dandelions flourish too.

PULLING THE WEEDS AND PREPARING THE SOIL: FOUNDATIONAL BELIEFS OF AN AAC-AFFIRMING SCHOOL

Before a garden can flourish, the soil must first be prepared. In the same way, building an AAC-affirming school begins with recognizing and removing barriers that limit communication and inclusion.

Barriers may include inconsistent access to communication systems, limited AAC training, exclusion from classroom and social opportunities, lack of collaboration time, fragmented implementation, staff turnover, or the belief that AAC belongs only to the SLP rather than the broader school community.

Other barriers take the form of misinformation. Educators may hear statements such as, "AAC will prevent a student from talking," or "They need to prove cognitive readiness first." Research has consistently disproven these myths. In fact, access to robust AAC systems and responsive communication partners is associated with greater independence, stronger relationships, increased opportunities to communicate, and, in many cases, growth in spoken language (Ronski & Sevcik, 2005; Light & McNaughton, 2012).

These misconceptions do real harm. They lower expectations and delay access to communication. We once worked with a student whose team delayed robust AAC access for years while waiting for clearer signs of "intentional communication" and other prerequisite skills. Once she had access to a robust system and engaging learning experiences, she used the device itself to demonstrate many of the skills the team had been waiting to see. Within weeks, she began independently commenting during shared reading.

AAC-affirming schools actively challenge these falsehoods through ongoing conversations, professional learning, and shared messaging. (Photo 2) Small but consistent reminders



Photo 2 - A school bulletin board highlights the many ways people communicate.



BACK TO
CONTENTS

through newsletters, staff meetings, coaching conversations, and school-wide messaging often create more lasting change than one-time trainings alone.

FOUNDATIONAL BELIEFS OF AAC-AFFIRMING SCHOOLS

These foundational beliefs shape the decisions educators make every day, from how communication is supported to how inclusion is understood.

1. *Every student is a communicator.*

All students communicate, regardless of whether they use speech, gestures, sign language, eye gaze, writing, or AAC systems. Presuming competence means recognizing that every student has thoughts, preferences, ideas, and the right to express them. Every student has something worth saying. Communication is not something students must “earn” through prerequisite skills or compliance.

As Janice Light and David McNaughton (2014) emphasize, individuals who use AAC share the same fundamental goals of participation, connection, and communication as those who rely on speech.

2. *AAC belongs everywhere.*

Communication does not begin and end in the therapy room. Students need access to AAC systems throughout the school day: in classrooms, hallways, cafeterias, playgrounds, buses, and extracurricular activities. An AAC device is less like specialized equipment and more like a student’s voice: something that travels with them wherever communication happens.

3. *Everyone is a communication partner.*

AAC cannot rest solely on the shoulders of SLPs or families. Teachers, paraeducators, office staff, cafeteria workers, peers, bus drivers, recess supervisors, and administrators all shape opportunities for communication and connection. Communication is relational. Students learn communication from people who talk with them, not just to them.

4. *Communication is a human right.*

At its core, AAC is about access, dignity, autonomy, and civil rights. Communication is how people build relationships, participate in communities, advocate for themselves, and shape their own lives. It is also how people share their identities, interests, humor, culture, and experiences. The ability to greet a friend, ask a question, protest, share an idea, express identity, or simply be known by others should never depend on a student’s speech abilities. Having a reliable way to communicate is not simply best practice or an educational preference; it is also supported through disability rights and educational law.

Once these beliefs are named, they must move beyond philosophy and into practice. Leadership, scheduling, policies, professional learning, and everyday interactions all shape whether AAC truly becomes part of school culture.

CULTIVATING THE ENVIRONMENT: SCHOOL-WIDE IMPLEMENTATION STRATEGIES

ADMINISTRATIVE SUPPORT

AAC-affirming schools require leadership that actively promotes access to communication and inclusion. Administrators shape school culture not only through large initiatives, but through everyday actions, priorities, and decisions. When principals greet students using AAC, pause while a student builds a message, or attend IEP meetings with curiosity and engagement, they communicate something powerful: AAC is not an “extra.” It is part of how students learn, connect, and belong within the school community.

One elementary principal models AAC during classroom read-alouds and encourages a simple shift in language across the school: replacing “turn and talk” with “turn and share.” This subtle change validates all forms of communication and reinforces the message that participation matters more than how students communicate.

Staff notice whether inclusion is a priority or simply a talking point. An administrator may speak passionately about inclusion, but if teams are not given time to collaborate, devices are inconsistently available, or staff lack training, educators notice the disconnect. Leaders who protect planning time, fund professional learning, and learn alongside staff help create a culture where AAC and communication access belong to everyone.



Photo 3 - A principal participates in a classroom AAC lesson.

One principal emphasized that [master schedules can be powerful tools for supporting inclusion](#). By creating collaboration time and protecting PLC structures, they can make AAC implementation far more sustainable.

In another elementary school, a principal observed a co-taught literacy lesson led by a first-grade teacher and SLP. (Photo 3) She later joined students in communicating with AAC devices and core boards. Her participation sent a clear message that AAC was part of everyday school life.

STRUCTURES THAT SUSTAIN ACCESS

AAC-affirming school teams intentionally build communication support into [policies](#), budgets, and professional learning rather than relying solely on individual staff initiative. This might include ensuring communication systems travel with students throughout the day, incorporating AAC into lesson planning and behavior support processes, funding AAC devices, or providing release time for collaborative planning and coaching.

This work does not always require large budgets. Schools often build communication-rich environments through creativity and collaboration: partnering with assistive technology [lending libraries](#), applying for [grants](#), [repurposing older devices](#), or sharing ready-to-use materials across classrooms. (Photos 4 and 5)

Schools also do not need large trainings to shift culture. Many schools build momentum through brief “communication corners” during staff meetings, short modeling [videos](#), learning walks, or reflection prompts such as: “How might an AAC user access this lesson?”

These small but consistent opportunities help normalize AAC as part of everyday teaching and learning.

STAFF TRAINING

AAC-affirming schools require ongoing staff learning that is practical and sustainable. One challenge schools frequently face is finding time for meaningful AAC learning amid already demanding schedules and competing initiatives.

Some schools use a tiered professional learning model that provides different levels of support depending on staff roles and needs. Tier 1 training focuses on foundational AAC awareness for all staff members, including teachers, paraeducators, office staff, recess supervisors, bus drivers, and administrators. The goal is not for every staff member to become an AAC expert, but to feel more comfortable supporting communication. Because so many staff members may need foundational AAC training, schools can use short [self-paced modules](#) to build shared understanding while freeing AAC specialists to focus on coaching, collaboration, and problem-solving.

Tier 2 training provides more hands-on support for educators and therapists who regularly work alongside students using AAC systems. (Photo 6) Staff often benefit most from hands-on



Photo 4 - Twenty large core vocabulary boards were funded through a school foundation grant.

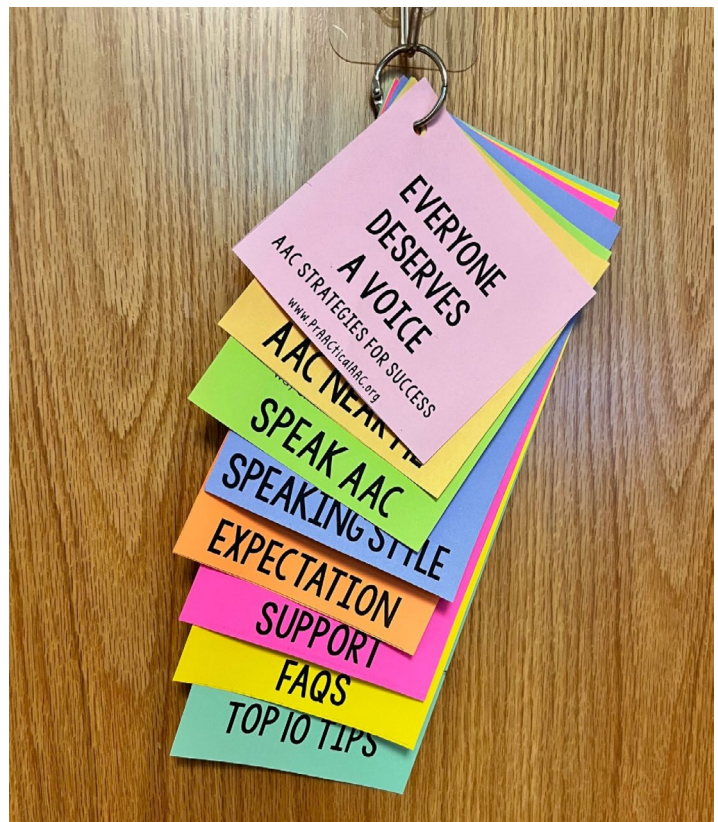


Photo 5 - This AAC Flipbook from PrAACtical AAC supports ongoing staff learning.

opportunities to explore devices in low-pressure environments while learning practical strategies such as using search features, modeling vocabulary, or building communication opportunities into existing classroom routines.

During one training, a paraeducator worried she would “mess up” a student’s AAC system by touching it. After several coaching

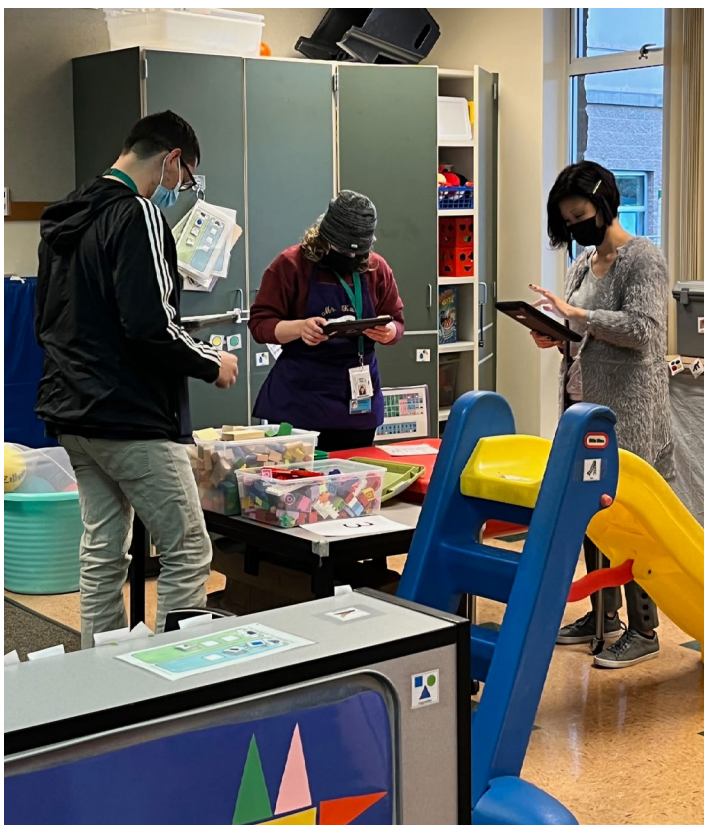


Photo 6 - Paraeducators practice communicating with one another using AAC during training.

PLANTING AAC IN EVERY CLASSROOM: PRACTICAL INTEGRATION STRATEGIES

AAC IN THE ENVIRONMENT

AAC should be visible, available, and woven naturally throughout the school environment. Simply hanging symbols on walls is not enough. The goal is to create environments where communication is expected, supported, and normalized. When **AAC becomes part of the environment**, students often begin using it in ways adults never anticipated.

One elementary school posted large core vocabulary boards on the playground and in the gym. (Photo 7) After only one instructional lesson, students began racing over to the boards during tag games and while jumping rope, independently pointing to words like “go,” “fast,” and “chase.”



Photo 8 - Preschool students explore a newly installed playground core vocabulary board.



Photo 7 - Sara Ayars models use of a large core vocabulary board during PE.



Photo 9 - Grab-and-go core vocabulary boards are available in the school hallway.

sessions, she even asked to take a device home to practice. Later she shared, “Now I am almost as quick at using the device as my student!” Stories like this highlight the power of supported practice and coaching.

Tier 3 training helps schools develop staff members who can mentor and support others over time. Coaching, collaborative planning, classroom observation, and reflection all help move AAC knowledge beyond a single expert and into the broader school community.

AAC can also become part of school culture through communication murals, guest readers modeling AAC during story time, or student leadership opportunities. When AAC is visible throughout the environment, communication support becomes the expectation rather than the exception. (Photos 8 and 9)

TEACH WITH AAC, NOT JUST ABOUT AAC

AAC-affirming schools recognize that communication supports can benefit many learners, not only students with identified communication disabilities. When classrooms are designed to support our orchids, they often become more accessible for every learner in the room.

Too often, AAC is introduced only during isolated “communication time” or speech therapy or viewed as something belonging exclusively to a small group of students. But AAC is most powerful when it is used during real classroom learning alongside peers. Literacy instruction provides one natural place to begin.

SUPPORTING LITERACY INSTRUCTION

Embedding AAC into literacy instruction helps make language visible. Pairing spoken language with symbols, written text, and modeled vocabulary supports students with auditory processing differences, language delays, attention challenges, and emerging literacy skills. AAC can also reinforce foundational literacy concepts such as word order, left-to-right tracking, and connections between spoken and written language. Core vocabulary aligns naturally with high-frequency sight words and early literacy instruction.

Teachers might model key vocabulary during read-alouds, use AAC to discuss story elements, support writing through



Photo 10 - A teacher uses a core vocabulary board during a lesson on the letter M.



YouTube Video 1 - AAC is integrated into general education instruction. https://youtu.be/aV411_sl-Dw

word prediction tools, or provide symbol-supported word banks during writing tasks. Communication and literacy often develop side by side. (Photo 10 and Video 1)

During shared reading, one paraeducator began modeling only two or three repeated words on a core board: “turn,” “on,” and “off.” The strategy was simple enough to sustain, and students quickly began using those words during other parts of the day.

AAC AS A SUPPORT FOR MULTILINGUAL LEARNERS

AAC can help multilingual learners join classroom conversations by providing visual supports and additional ways to communicate. (Photo 11)



Photo 11 - A mid-tech AAC device is programmed with greetings in students’ home languages.



Photo 12 - A robust AAC app is available on every student device in this general education classroom.



Photo 13 - An SLP models vocabulary during whole-group instruction.

One kindergarten teacher began the school year with 16 students, 14 of whom were multilingual learners. The teacher uploaded an AAC app onto all classroom devices as a universal support. (Photos 12 and 13) During a classroom discussion about favorite foods, one student who primarily spoke Russian, and who had not yet spoken English at school, used his device to enthusiastically say: “Strawberry! Strawberry! Strawberry!” The room erupted in laughter and excitement as classmates immediately joined the conversation. For the first time, they were able to see his preferences and personality emerge within the classroom community.

Moments like these remind us that communication competence is often present long before students are given the tools and environments needed to express it.

AAC AS A RECEPTIVE SUPPORT

AAC can also provide powerful receptive support by giving students something stable to look at while they process spoken information.

For example, a teacher might verbally explain directions while simultaneously modeling or typing the instruction into a projected AAC system or visual display. (Photo 14, NEXT PAGE) Instead of repeatedly restating directions verbally, the teacher creates a visual reference point students can revisit independently throughout the activity.

For many students, seeing language while hearing it lowers stress and helps them stay engaged longer.

EMBEDDING AAC INTO DAILY ROUTINES

AAC becomes most meaningful when it is woven naturally into the rhythm of the school day. Schools and classrooms might greet students using AAC, offer visual morning check-ins, create calm-down corners with communication supports (Photo 15), or encourage multiple forms of expression during discussions and activities.

At the same time, educators must thoughtfully support students who rely on AAC systems as a primary mode of communication. Often, planning begins before the lesson

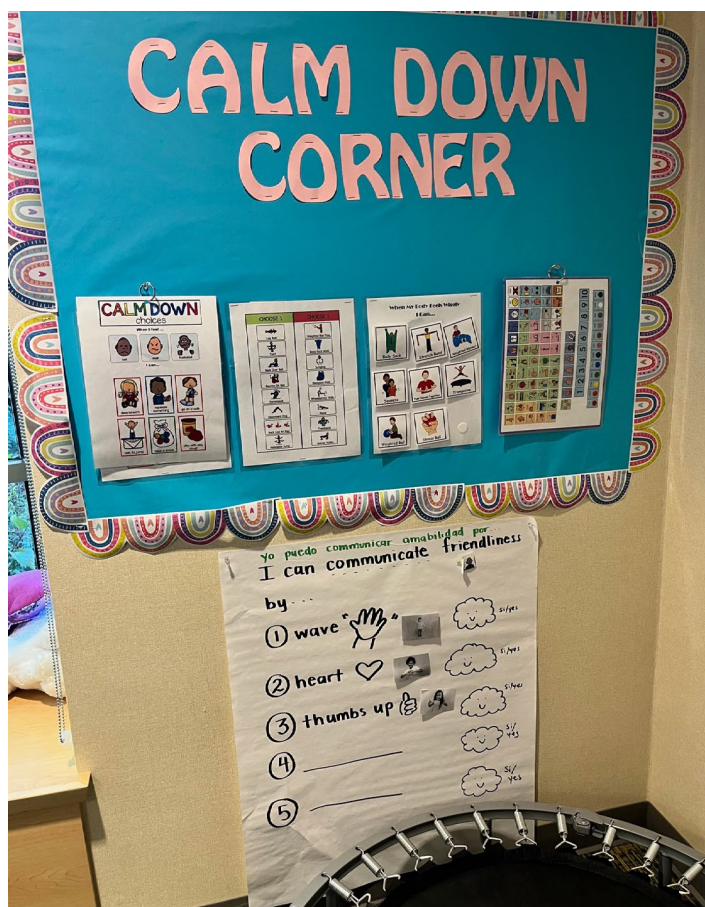


Photo 15 - A classroom calm-down corner supports student self-regulation.

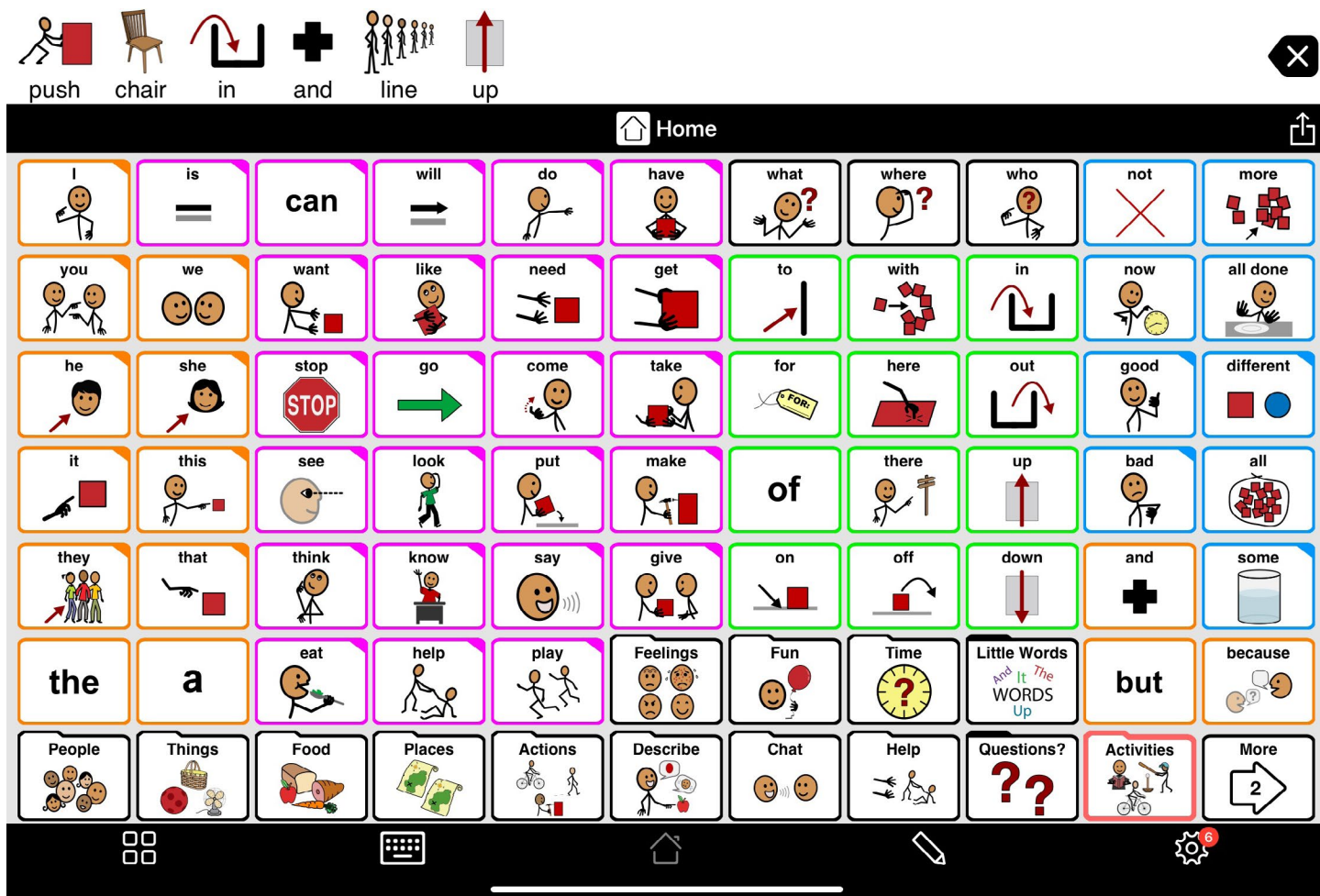


Photo 14 - AAC provides visual support for verbal directions.

even starts. It might include identifying key vocabulary, adding relevant words to systems, or allowing additional time for participation.

Communication takes time, and students who use AAC can be unintentionally excluded when conversations move too quickly. Simple strategies such as pausing longer, returning to a student after additional processing time, or using [rate-enhancement supports](#) can make conversations far more accessible. When classrooms prioritize speed over access, some voices disappear. AAC-affirming classrooms intentionally create space for those voices to be heard.

GROWING STRONGER TOGETHER: PEER INVOLVEMENT AND SOCIAL INCLUSION

Communication growth is deeply social. AAC users develop skills and confidence not only through adult instruction, but through authentic interactions with peers. Inclusive environments give AAC users natural opportunities to learn, connect, problem-solve, and build relationships with peers. Peers provide natural models for language, humor, problem-solving, and [belonging](#) in ways adults alone cannot replicate. Research consistently shows that students with significant disabilities

experience stronger academic, communication, social, and inclusion outcomes when meaningful peer relationships and peer support arrangements are prioritized (Carter et al., 2015).

The strongest peer partnerships are reciprocal. (Video 2) All students benefit from opportunities to develop



YouTube Video 2 - A teacher reflects on the ways inclusive classrooms support growth and belonging for all students..
<https://youtu.be/dASUUGBW6-U>



Photo 16 - A moment of peer connection during whole-group instruction.



Photo 17 - A third-grade peer models language on a classmate's AAC device.

empathy, flexibility, leadership, and deeper understanding of communication diversity. As one third grade student so eloquently reflected, *"I found it kind of interesting to learn about devices. I've learned how different people can communicate. Like I knew about like sign language and almost speaking, but ... it was interesting to learn about a different way of learning, a different way of speaking."* (Photo 16)

BUILDING AWARENESS AND NORMALIZATION

Meaningful peer inclusion begins with normalization and education. Teachers can [introduce AAC to the entire class early in the school year](#), model core vocabulary boards during instruction, and discuss the many ways people communicate. Often, simple explanations are most effective: *"Some people use spoken words to communicate. Some people use devices, pictures, gestures, or signs. AAC helps people express themselves and participate."*

When AAC is normalized for everyone, students are more likely to approach communication partners naturally rather than viewing AAC as unfamiliar or intimidating.

PEER SUPPORT ARRANGEMENTS

One evidence-based way to increase both academic engagement and communication opportunities is through [peer support arrangements](#). In these models, students work together as collaborative learning partners while adults provide guidance and facilitation as needed. [Rather than relying primarily on adult support](#), AAC users collaborate with peers during classroom routines, projects, and discussions. (Photo 17)

During a writing activity about protecting the environment, one emerging AAC user scanned vocabulary on her device while a peer modeled how to select words and helped expand ideas into written sentences. (Photo 18) In another classroom, a small group collaborated on a story while the AAC user contributed



Photo 18 - A student and her AAC-using peer collaborate on a written response.



YouTube Video 3 - Third-grade students work together to create shared artwork. <https://youtu.be/tYCGxPU5III>

descriptive vocabulary and ideas that peers helped illustrate. These partnerships often become more than instructional supports. They become opportunities for collaboration and genuine connection. (Video 3)

PEER NETWORKS AND EXTRACURRICULAR INCLUSION

Social inclusion should extend beyond academic classrooms. [Peer support networks](#) can help students who use AAC be more fully included in extracurricular activities, clubs, and informal social experiences.

One high school created a lunchtime Minecraft club facilitated by the school SLP. Because the activity centered around a highly motivating shared interest, students who used AAC had natural opportunities to collaborate, negotiate, and build friendships with peers. Relevant gaming vocabulary had been added to students' AAC systems beforehand, allowing them to join conversations more independently and naturally. Communication systems should reflect students' real interests, humor, and identities, not just academic vocabulary.

One middle school student often had a hard time getting words out when he was frustrated. Before AAC supports were consistently available, peers mostly saw the frustration: thrown pencils, flipped chairs. Once he had a way to say "stop," "I need a break," or "I'm mad," classmates and teachers began to understand him differently. AAC did not just reduce conflict; it helped repair relationships.

AAC user and self-advocate Mateo Morano reminds us that true friendship is a two-way street and that there is a [difference](#)

between a peer "being a helper" and true friendship. Educators should keep this in mind when supporting peer networks.

These kinds of relationships matter. Yet building and sustaining them requires time, support, and systems that help educators navigate the realities of modern schools. Time is limited. Staffing is stretched. Resources are often scarce. Increasingly, schools are exploring whether emerging tools such as artificial intelligence can help reduce some of these barriers while preserving the human relationships at the heart of communication.

FERTILIZING GROWTH: THOUGHTFUL USES OF AI IN AAC-AFFIRMING SCHOOLS

Throughout this article, we have highlighted creative ways educators are working to reduce barriers to communication, participation, and inclusion. One support we have not yet discussed is the thoughtful [use of artificial intelligence \(AI\)](#).

AI is certainly not replacing the heart of AAC-affirming education: educators, communication partners, relationships, and authentic human connection. But much like fertilizer in a garden, AI can help support growth by reducing workload, increasing access, and making inclusive practices more sustainable.

Many educators are already using AI tools to create visual supports. With the right prompts, teachers can generate picture-supported schedules, social narratives, visual choice boards, adapted reading materials, and multilingual home communication in minutes rather than hours. One educator used [Glint](#) to create a social narrative preparing students for an



Photo 19 - Students create AAC-themed animal artwork after reading *If Animals Had Talkers*.

end-of-year school event. Another SLP used [NotebookLM](#) to generate facilitator guides that helped staff identify natural AAC modeling opportunities during classroom instruction.

As more educators embrace the idea of offering multiple “on ramps” into learning, AI can also help teams think more flexibly about participation. One educator shared the following prompt:

“Give me five ways a student could show understanding of this topic, including one that requires no writing and one that requires no verbal expression.”

Prompts like these encourage educators to think beyond traditional participation expectations while reducing planning demands for already overextended staff. For many teams, the greatest benefit of AI is not efficiency alone. It is freeing up more time and energy for the human relationships that AAC implementation depends on.

AI can also support representation and belonging in meaningful ways. One educator used AI to create coloring pages featuring favorite book characters who communicated using AAC. After reading a book about different forms of communication, students colored the pages and displayed them on a hallway bulletin board for the school community to see. (Photo 19)

At the same time, [thoughtful caution remains essential](#). AI may support access and reduce barriers, but it should never replace student voice, authorship, or agency. Especially for AAC users, [communication is more than output](#). It is identity, connection, autonomy, and self-expression. Those always belong to the communicator.

TENDING AND MAINTAINING THE GARDEN: SUSTAINING AAC CULTURE CHANGE

Lasting change happens gradually as school practices, relationships, and beliefs begin to align.

COACHING FOR REAL-WORLD IMPLEMENTATION

One of the most effective ways to support lasting AAC implementation is through [job-embedded coaching](#). Unlike one-time workshops, coaching allows educators to learn within real classroom and therapeutic contexts while receiving personalized support connected directly to their students and routines. The best coaching feels supportive, practical, and collaborative rather than evaluative. It often includes shared planning, classroom observation, live modeling, and honest reflection about what was or was not working.

Many AAC coaching cycles follow a simple structure over several weeks: a planning conversation, classroom observation, and reflective feedback session focused on educator goals and student participation. One educator reflected after a coaching cycle: “I learned more in six weeks of coaching than in years of trainings.”

Part of coaching's power is that learning happens within the realities of everyday school life rather than under ideal

conditions. At times, it meant troubleshooting and modeling during a chaotic morning meeting. On other days, coaching involved AAC modeling while students were yelling, someone was crying, and a fire drill interrupted the lesson halfway through. Just as valuable were the quieter moments, such as celebrating the first time a student independently typed the letters in their name to “sign in” at the start of class.

MAKING THE WORK LAST

Long-lasting growth cannot depend on one passionate individual. When systems rely entirely on a single “AAC expert,” progress often disappears when that person changes roles or leaves the district. Sustainable implementation requires responsibility to be shared across the school community. AAC becomes part of school culture when it is woven naturally into routines, relationships, and everyday practice.

AAC-affirming schools intentionally create opportunities for ongoing reflection and learning. Staff meetings may include brief discussions about AAC successes and challenges. Schools may organize [classroom learning walks](#), share quick AAC implementation tips, or rotate focus themes throughout the year.

Students who use AAC should be visible participants within the life of the school, not only recipients of support. This might include [participating in morning announcements](#), serving in leadership roles, joining clubs, or contributing to school-wide celebrations.

Celebrating progress also matters more than one might think. Highlight students and staff who model inclusive communication practices. Recognition systems, bulletin boards, coaching certificates (Photo 20), and shared success stories help build a culture where communication access and inclusion are visibly valued.

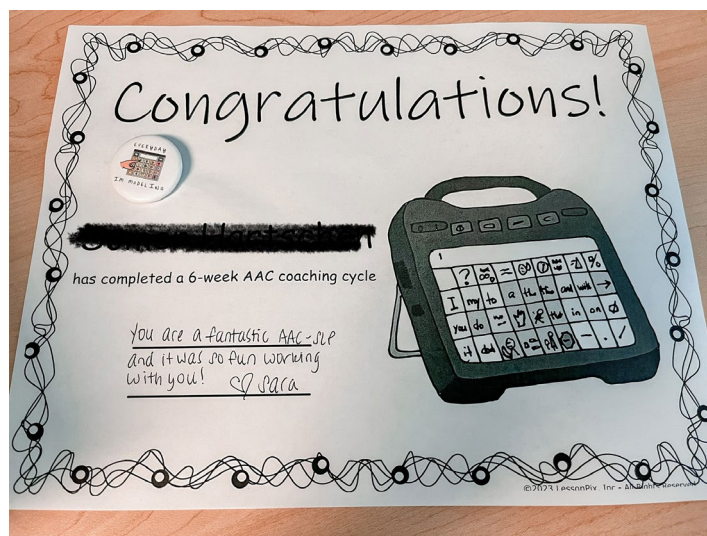


Photo 20 - A certificate and pin mark the completion of an AAC coaching cycle.

GROWING FORWARD: START SMALL AND TRUST THE PROCESS

Gardens do not bloom overnight. Long before visible growth appears above the soil, roots are already forming underneath. Meaningful change in schools works the same way. It rarely begins with sweeping initiatives. More often, it starts small: one modeled word, one visual support posted on a classroom wall, one administrator protecting collaboration time, or one teacher pausing long enough for a student using AAC to finish their message.

Rather than asking, “How do we change everything?” a more helpful question may be: “What is one small step we can take next?”

Sometimes growth looks like a student independently greeting a peer for the first time. Sometimes it looks like a teacher modeling AAC without hesitation, or a student finally being recognized as a communicator rather than a “behavior problem.” These moments may seem small at first, but over time they begin reshaping classrooms, relationships, and expectations.

This kind of growth also happens through relationships. “Go with the goers.” Find the colleague who is curious. The paraeducator already modeling language naturally. The administrator willing to listen. Sustainable change rarely happens alone.

There will be setbacks, and not all progress will be immediately visible. Lasting change is not built through perfection. It is built through consistency, reflection, and continued care over time.

As one parent reflected, when children grow up alongside peers with different communication styles and support needs, they learn that inclusion is simply part of how communities work. (Video 4)

AAC-affirming schools are not only places of support; they are places of connection, humor, creativity, belonging, and joy. They are places where every student is recognized as someone with something worth saying. And when we create schools where

orchids can thrive, we often discover that every learner—and the entire school community—has room to flourish.

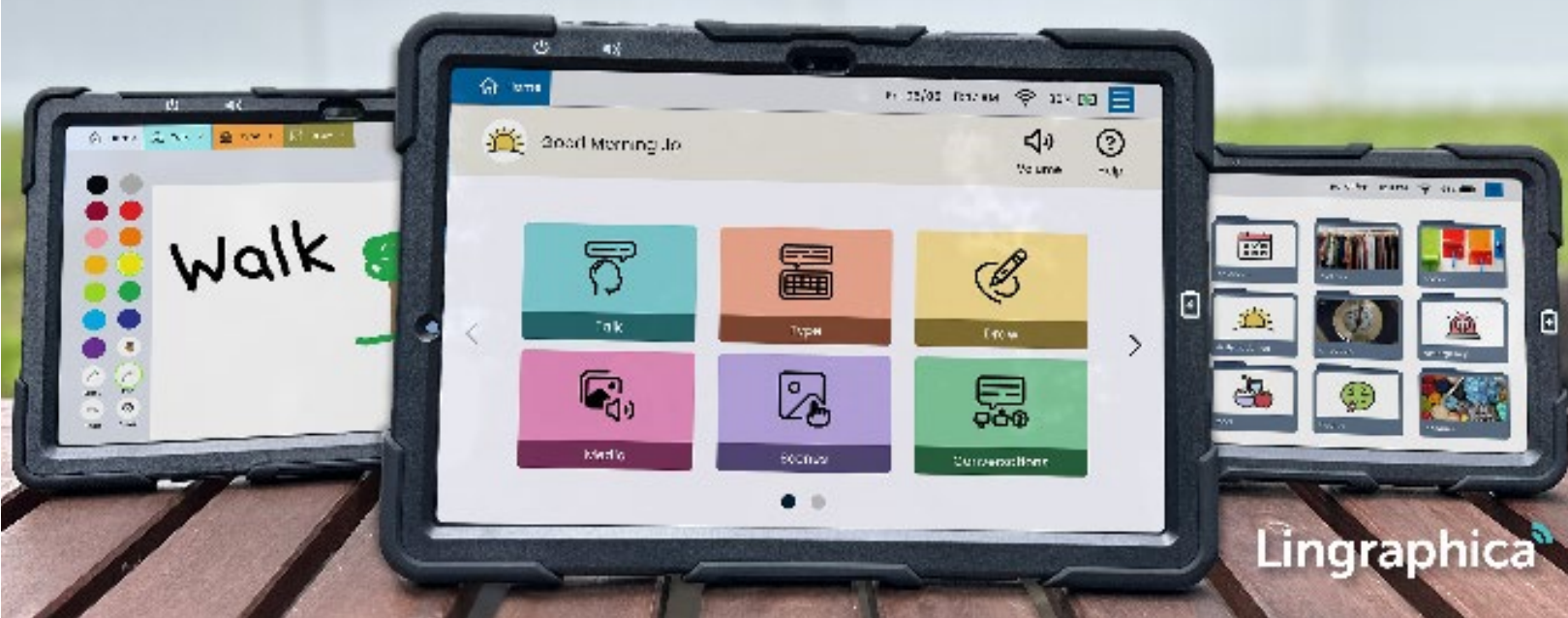
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YouTube Video 4 - A parent reflects on how inclusive schools help create a more understanding and connected world.
https://youtu.be/Mmfy9QIrd_s

Neurodiversity-Affirming AAC in Practice Through Lingraphica Hub



From Values to Access, Implementation, and Impact



SARA SCHNEIDER, Sara joined Lingraphica in 2022 and brings extensive experience providing speech and language services to both pediatric and adult populations. Her clinical background spans school-based services, outpatient care, acute care, inpatient rehabilitation, and skilled nursing settings. She has a strong passion for augmentative and alternative communication (AAC) and is dedicated to supporting individuals with communication challenges in achieving greater independence. Sara holds a bachelor's degree in Communication Disorders from Butler University and a master's degree in Speech Pathology from Purdue University.



BETH MCHOSE, M.S. Ed., CCC-SLP. Beth has been with Lingraphica since 2019 and brings broad clinical experience working with diverse populations across the lifespan. She previously served as an adjunct instructor at Old Dominion University. Beth is especially interested in how SLPs can provide inclusive, person-centered care that honors the unique ways individuals think, communicate, and experience the world.

Summary: This article will examine how neurodiversity-affirming AAC principles can be translated into sustainable clinical practice. It will outline common gaps between values and implementation, review evidence supporting AAC for autistic communicators, and explore how Lingraphica Hub supports access, customization, and longterm use. Through practical examples, tables, and clinical takeaways, the article will demonstrate how flexible AAC systems can help clinicians close the gap between intention and meaningful communication outcomes..

INTRODUCTION : WHEN GOOD INTENTIONS ARE NOT ENOUGH

Across speech-language pathology, neurodiversity-affirming care has become an increasingly visible and widely endorsed framework (Gaddy & Crow, 2023). Clinicians are reexamining long-held assumptions about communication, competence, and outcomes for autistic individuals. There is growing recognition that communication differences are not deficits to be eliminated, but variations to be supported — and that access to communication is a fundamental human right.

Yet for many speech-language pathologists (SLPs), a persistent gap remains between affirming principles and everyday clinical reality.

This gap shows up when AAC is indicated but delayed due to uncertainty about “readiness.”

When devices are approved but underused due to limited partner training.

When systems are selected with the best intentions but lack flexibility for real-world communication.

Neurodiversity-affirming AAC does not fail because clinicians lack commitment. It falters when values are not adequately supported by accessible tools, practical implementation pathways, and sustained clinical support.

This article explores how neurodiversity-affirming AAC can move from philosophy into practice, with a focus on how Lingraphica Hub helps close the gap between values and outcomes for autistic communicators.

“Neurodiversity-affirming AAC doesn’t break down because clinicians lack values — it breaks down when systems don’t support those values in practice.”

NEURODIVERSITY-AFFIRMING CARE: A PRACTICAL FRAMEWORK, NOT A PHILOSOPHY EXERCISE

Neurodiversity refers to the natural variation in human brains and minds — the infinite diversity of neurocognitive functioning within our species (Dr. Nick Walker - Neuroqueer). Within this framework, neurological differences such as autism are understood as part of human diversity rather than pathologies requiring correction.

For AAC providers, neurodiversity-affirming care is not an abstract stance. It directly shapes clinical decisions about when AAC is introduced, how it is framed, and what outcomes are prioritized (Sonny Jane Wise, 2023).

A neurodiversity affirming AAC approach emphasizes (Gaddy

& Crow, 2023):

- Presuming competence
- Respecting all communication modalities
- Supporting autonomy and self-advocacy
- Reducing harm associated with compliance-based intervention

This requires a shift away from asking, “Is AAC appropriate?” and toward asking:

What Neurodiversity-Affirming AAC Is — and Is Not

Neurodiversity-Affirming AAC IS:

- Proactive, not last-resort
- Flexible and customizable
- Centered on autonomy and access
- Supported across environments

“What barriers are preventing meaningful AAC access — and how do we remove them?”

Neurodiversity-Affirming AAC IS NOT:

- A rejection of skill-building
- Anti-speech or anti-progress
- A single device or layout
- Passive or unstructured intervention

AUTISM AND AAC: THE EVIDENCE IS CLEAR, THE IMPLEMENTATION IS NOT

Research consistently demonstrates that AAC benefits many autistic individuals across the lifespan. An estimated 25–50% of autistic people do not have sufficient spoken language to meet their communication needs, including individuals whose speech is inconsistent or context-dependent (Patten et al., 2013).

Decades of research have also made one finding unequivocal: AAC does not impede speech development (Schlosser & Wendt, 2008). Instead, AAC often supports gains in expressive and receptive language while reducing frustration and stress (Ganz, 2015).

- Despite this evidence, AAC is still too often:
- Introduced late
- Restricted to requesting
- Used only in therapy
- Abandoned due to lack of support

“The evidence for AAC is strong. The gap is not what we know — it’s how consistently we implement what we know.”



BACK TO
CONTENTS

WHERE THE GAP SHOWS UP IN CLINICAL PRACTICE

Neurodiversity-affirming AAC breaks down in predictable ways. Naming these breakdown points is essential to closing the gap.

COMMON BARRIERS TO AFFIRMING AAC IMPLEMENTATION

Barrier	How It Appears In Practice	Clinical Impact
“Readiness” as-sumptions	AAC delayed due to attention, imitation, or symbolic concerns	Missed language opportunities
Limited customiza-tion	Vocabulary does not reflect real life	Reduced engagement
Inconsistent partner support	AAC used only in therapy	Poor carryover
Rigid system design	System cannot grow with user	Communication con-strained
Sensory mismatch	Visual or auditory overload	Device avoidance

These barriers are not failures of clinicians or families. They reflect a mismatch between clinical intent and system support.

LINGGRAPHICA HUB: BRIDGING VALUES AND IMPLEMENTATION

No AAC system is universally appropriate. What matters is whether a system can support real-world use over time.

Hub is Lingraphica’s AAC platform — a flexible foundation built on the belief that no two people need the same communication solution. It lets us develop purposeful yet flexible apps that together meet the real diversity of communication needs. Each app has a job. But no two people will use them the same way — and that’s the point.

Lingraphica Hub helps close implementation gaps by addressing common points of breakdown:

- Delays in setup
- Limited flexibility
- Difficulty supporting multiple communication styles
- Insufficient partner training

Key features include:

- Simple, user friendly programming for users, communication partners, and clinicians
- Literal language systems that reduce ambiguity
- Real photographs and realistic drawings
- Multimodal communication pathways (Talk, Draw, Type, Media, Scenes)

“Flexibility is not a bonus feature — it is what allows AAC to remain usable as communicators grow and environments change.”

LANGUAGE DEVELOPMENT AND AAC: SUPPORTING MULTIPLE PATHWAYS

Autistic individuals may demonstrate different language acquisition patterns, including analytic and gestalt language processing. Neurodiversity-affirming AAC does not privilege one pathway over the other.

SUPPORTING BOTH LANGUAGE PROFILES

Feature	Analytic Lan-guage Support	Gestalt Lan-guage Support
Message window	Builds novel sen-tences	Combines phrases
Stored messages	Carrier phrases	Functional gestalts
Keyboard access	Generative language	Flexible expression
Context pages	Daily routines	Situational meaning

This flexibility allows AAC systems to evolve alongside the communicator rather than constraining development.

CLINICAL TAKEAWAYS

- Language development is not linear — and AAC should not be either
- Systems must support growth, not just current skill
- lexibility reduces abandonment

CUSTOMIZATION AS NEURODIVERSITY-AFFIRMING PRACTICE

Customization is not an optional add-on. It is a clinical decision with ethical implications.

Effective customization for AAC systems can include:

- **Highfrequency or frequently needed vocabulary** to support efficient communication
- **Personalized vocabulary** reflecting interests, identity, culture, and lived experience
- **Functional language** for regulation, refusal, advocacy, and emotional expression
- **Contextbased or activitybased pages** aligned with daily routines and environments
- **Prestored messages or scripts** that support efficiency and honor the user’s preferred communication style

Lingraphica’s Hub allows clinicians to move beyond generic layouts toward systems that reflect the communicator’s lived experience.

“When AAC reflects real life, it becomes usable. When it reflects therapy goals alone, it often doesn’t.”





Image 1 - Lingraphica-TouchTalk

PROMOTING COMMUNICATION BEYOND REQUESTING

Neurodiversity-affirming AAC expands communication beyond wants and needs to include:

- Initiation
- Social interaction
- Safety communication
- Self-advocacy
- Enjoyment

Quick-access features support urgent communication, while broader page sets allow participation in conversations and routines.

CLINICAL TAKEAWAYS

- Requesting is not the highest form of communication
- Self-advocacy language should be programmed early
- AAC should support saying “no,” not just “yes”

CLINICAL IMPLEMENTATION: MAKING AAC STICK

Introducing AAC Without Pressure

How AAC is introduced shapes how it is used. Affirming implementation emphasizes:

- Client-led interaction
- Modeling without expectation
- Avoiding hand-over-hand prompting
- Encouraging exploration

Affirming implementation emphasizes that AAC can be woven into everyday life without relying on formal activities or lessonlike routines. It’s understandable that incorporating AAC into busy days can feel overwhelming, but meaningful use grows from natural, clientled interaction. Research shows that modeling on the AAC system during authentic activities supports communication growth and engagement (Allen et al., 2020). Model language without expectation by selecting words as you say them, offering exposure rather than requiring imitation. Use thoughtful pauses to create space for autonomous communication — partner instruction research demonstrates



BACK TO
CONTENTS

that strategies such as waiting, observing, and responding contingently significantly improve communication outcomes for individuals who use AAC (KentWalsh et al., 2015). Follow the client's lead through familiar or preferred activities and model relevant language along the way. For example, if a client starts rolling a ball back and forth, the SLP might model *"here it comes"* or *"you got it."* If a client begins exploring something in the room — picking it up, opening it, or seeing how it works — the SLP might model *"let's try it"* or *"look at that."* These small, responsive moments help AAC become a comfortable and empowering tool for communication, where exploring the system is meaningful — not a requirement or performance.

"AAC becomes meaningful when users are invited to explore — not required to perform."

PARTNER TRAINING: THE MISSING LINK

AAC success is rarely about the device alone. It is shaped — daily — by the people who surround the communicator. Without consistent partner modeling and genuine buyin, even the most thoughtfully designed systems risk limited use or eventual abandonment.

Lingraphica's clinical support and trial pathways help ensure that:

- Families understand AAC as the user's voice
- Partners model language naturally and without pressure
- Communication partners respond to all communication attempts
- AAC is integrated into real routines, not just therapy tasks

Through intentional guidance and hands-on practice, families and partners understand not just how the system works, but why it matters. When communication partners view AAC as an authentic mode of expression, they shift from "prompting use" to participating in communication. As partners feel confident navigating vocabulary, modeling interactions, and supporting exploration, AAC naturally extends beyond the therapy room and into everyday life.

"When partners are empowered, AAC becomes a shared language — not a clinical tool."

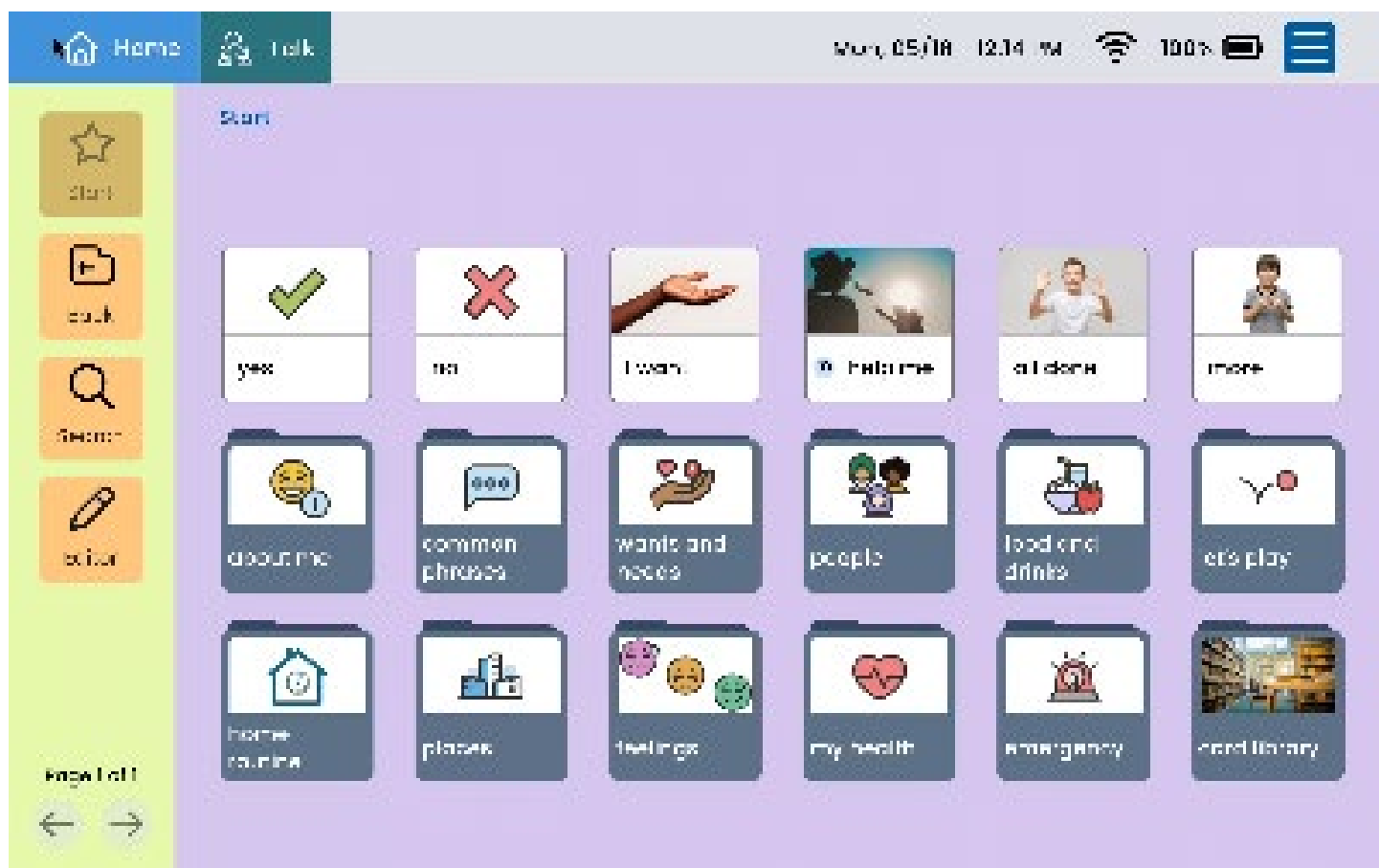


Image 2 - Background Colors - Larger field, lighter background

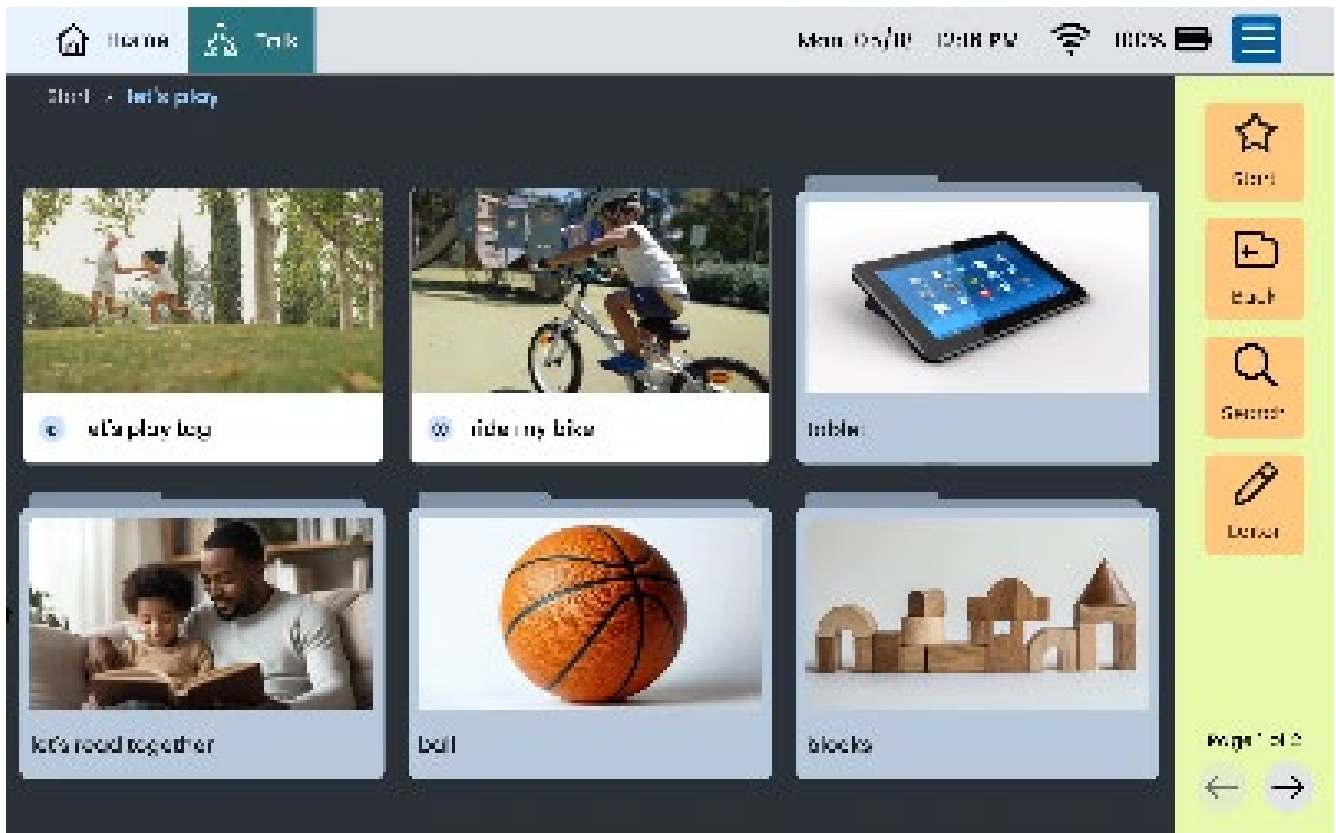


Image 3 - Grid Size and Icon Density - Smaller field, dark background, right button bar

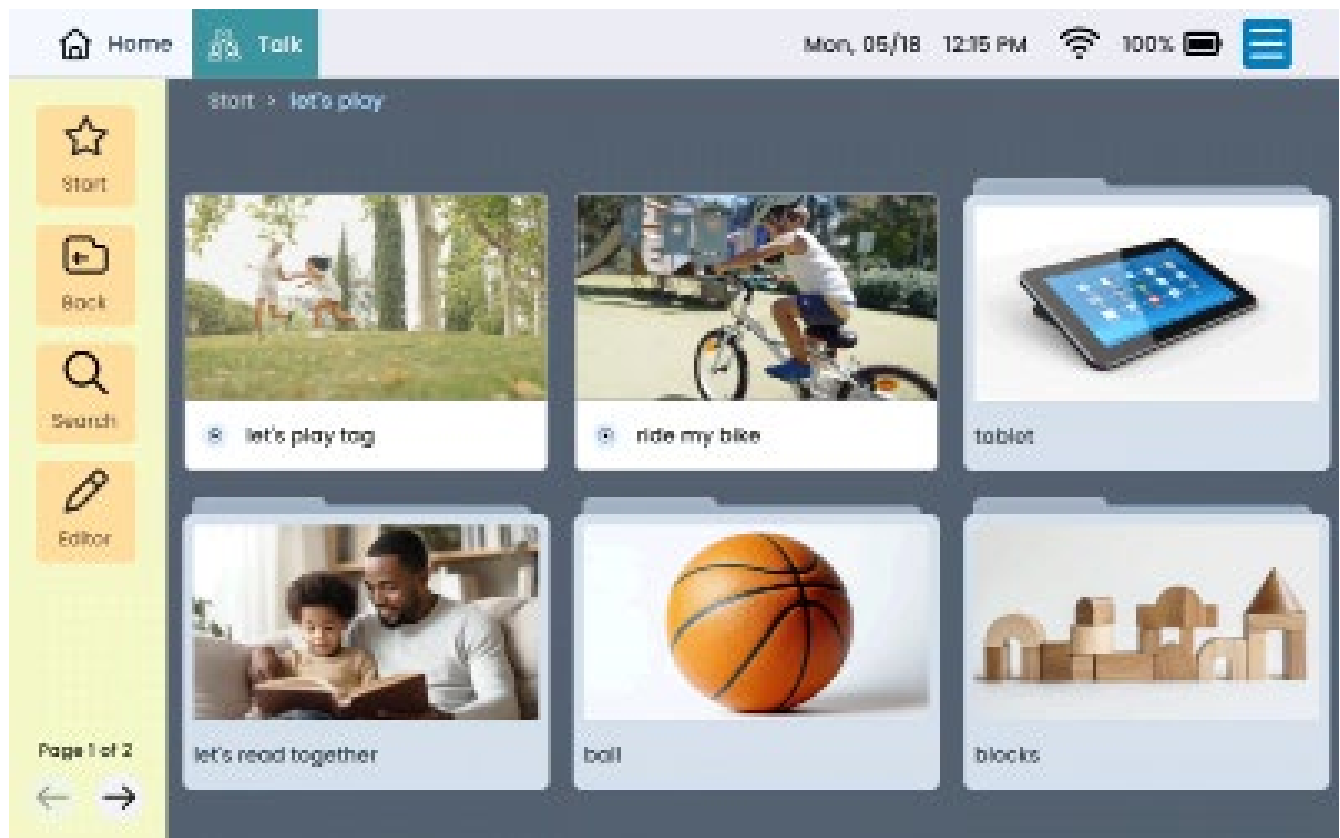


Image 4 - Screen Brightness and Contrast - lighter background and darker contrast

SENSORY CONSIDERATIONS: ACCESS IS INDIVIDUAL

Autistic individuals often have unique sensory profiles. AAC systems must accommodate:

- Screen brightness and contrast (Image 4)
- Volume levels
- Background colors - (Image 2)
- Grid size and icon density (Image 3)

(See image 2, 3 and 4)

Lingraphica Hub allows clinicians to individualize these features, reducing sensory barriers to communication.)

UNDERSTANDING STIMMING AND DEVICE EXPLORATION

It can be challenging to navigate moments when a client uses their AAC system in ways we may not initially expect. Repeating specific vocabulary or navigating the device in a patterned way is often labeled as “stimming,” but this behavior deserves a deeper, more affirming interpretation. Rather than viewing it as offtask or problematic, we can reconsider what it communicates and how to respond meaningfully.

All device exploration is good. Foundational AAC research (Light & McNaughton, 2014) shows that early AAC use supports the same developmental foundations as early speech. Just

as spoken language begins with babbling, AAC users often “babble” through their systems — tapping, repeating, and experimenting with vocabulary. This exploration is a natural part of learning language, building familiarity with the system, and enjoying communication. When we attribute meaning to what the client selects, we help them connect symbols to concepts and reinforce that communication can be intentional.

Following the client’s lead is essential. Taking interest in the vocabulary they gravitate toward allows us to build on preferences, expand related concepts, and introduce new language in a way that feels relevant and engaging. Repetition may also serve a regulatory purpose. Exploring how repeated selections make the client feel can open opportunities to offer additional sensory or emotional supports, or to help them identify and label emotions. For example, if a client repeatedly selects “music,” an affirming response might be, “You’re choosing ‘music’ a lot — do you want music?” If they keep tapping “no,” you might say, “You’re saying ‘no.’ Let’s see what ‘no’ means for you right now,” and then model options like “stop,” “different,” or “break.” These responses keep the interaction open, respectful, and connected to the client’s experience.

The key takeaway is simple: respond to all AAC as meaningful. In Kapp et al.’s (2019) review of autistic adults’ experiences, participants emphasized that these behaviors are not

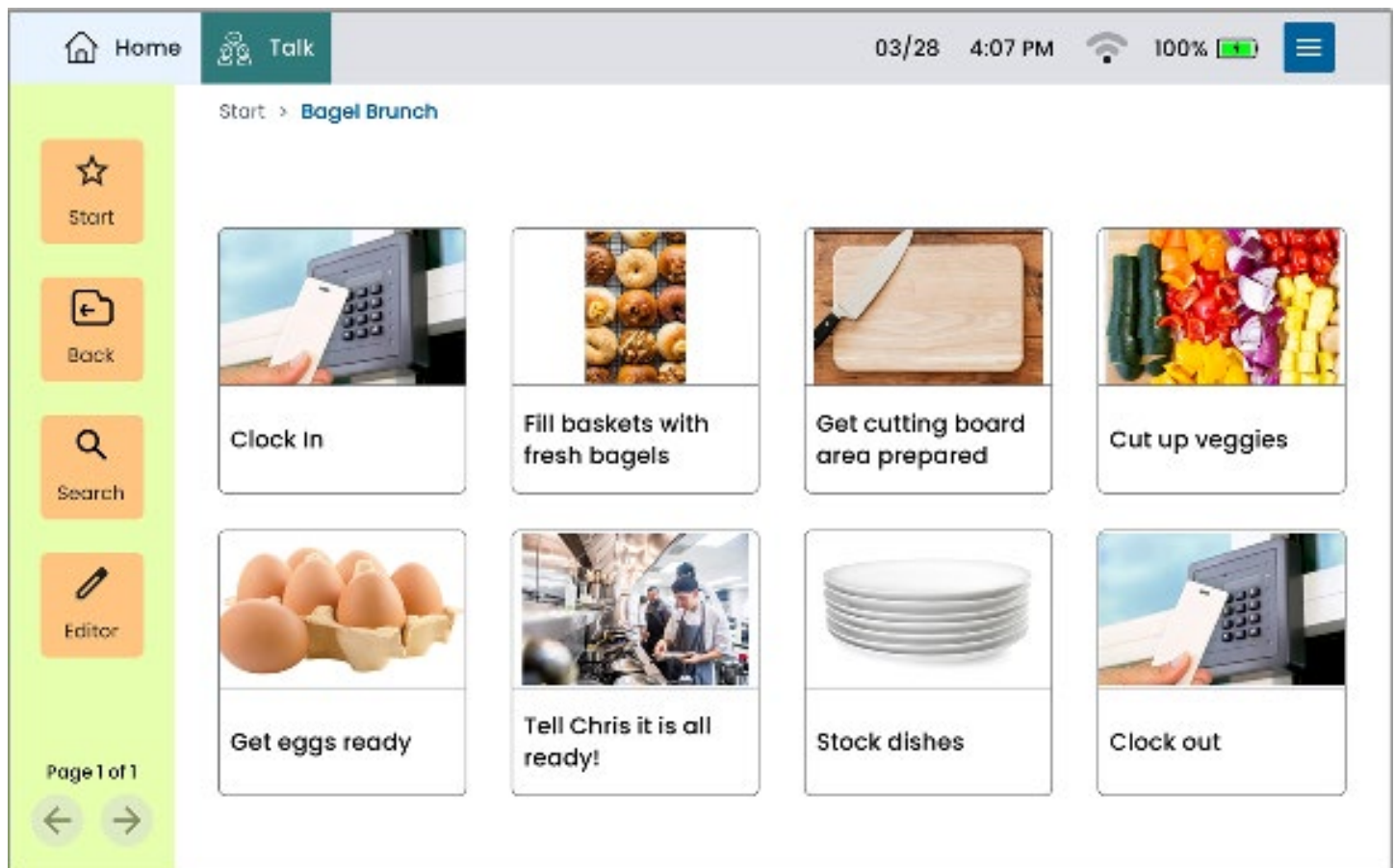


Image 5 - Visual Schedule - "Bagel Brunch"

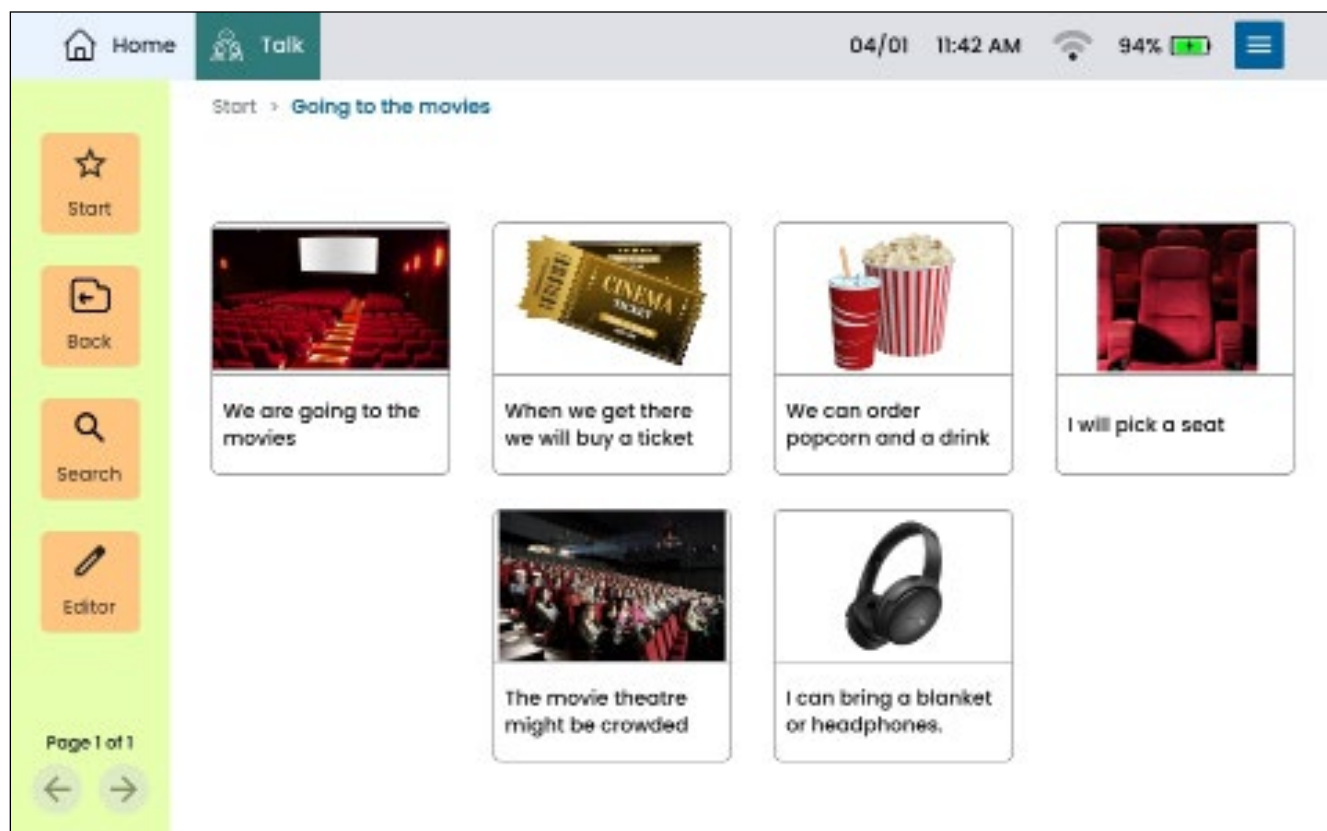


Image 6 - Social Stories - "Going to movies"

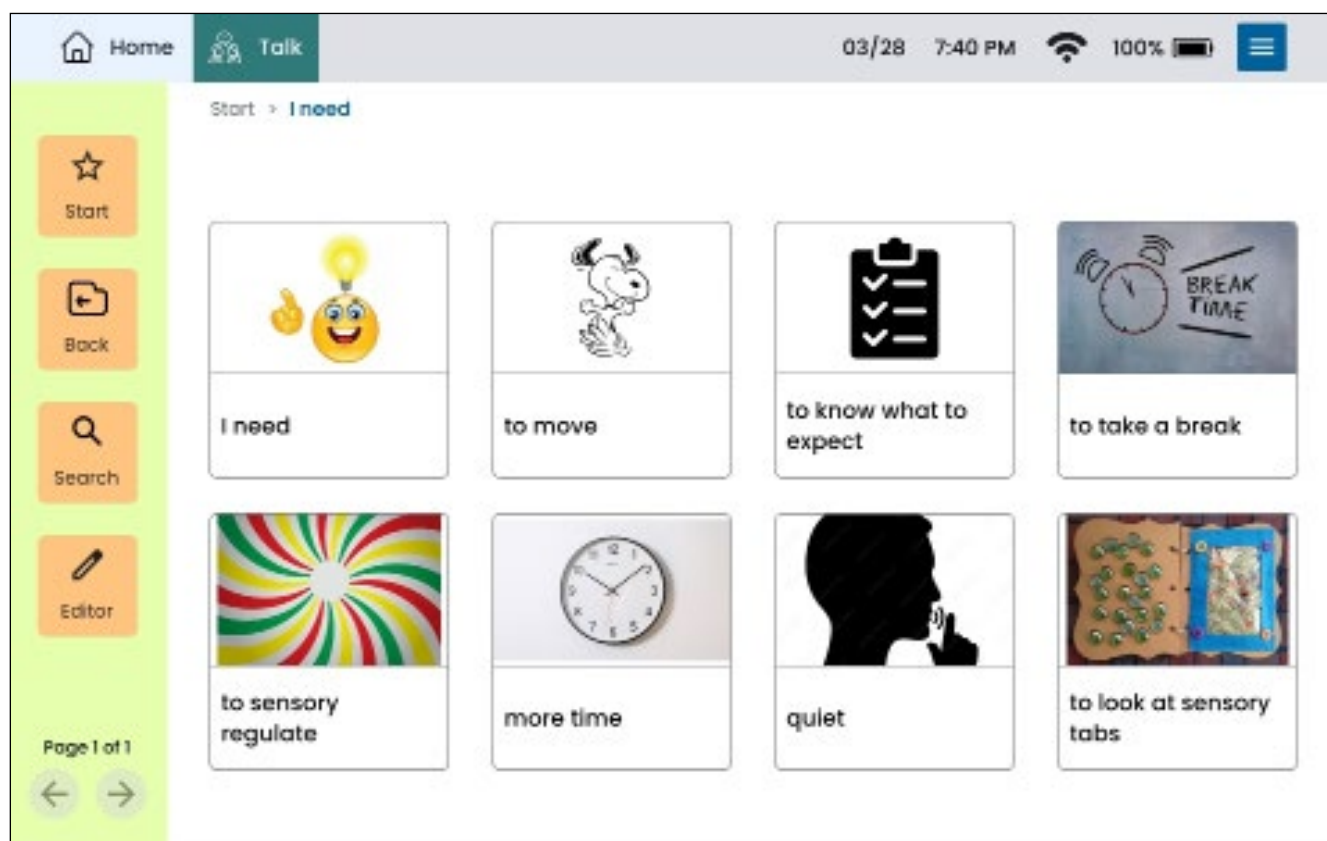


Image 7 - Emotional Regulation - "I need"

“disruptions” but adaptive mechanisms that support regulation and communication. When we understand through this lens, our responses become more attuned, respectful, and effective.

“If a behavior supports regulation, it supports communication.”

BEYOND COMMUNICATION: AAC AS ACCESS TECHNOLOGY

- AAC systems can support:
- Visual schedules (Image 5)
- Social stories (Image 6)
- Emotional regulation (Image 7)
- Participation in decision-making (See image 5, 6 and 7)

These uses reinforce AAC as access technology, aligned with the Communication Bill of Rights — not merely a speech replacement (NJC Communication Bill of Rights, 2024).

ACCESS PATHWAYS: SUPPORTING SUSTAINABLE AAC USE

Access without support is not true access. Sustainable AAC requires:

- Timely trials
- Individualized assessment
- Ongoing clinical consultation

Lingraphica offers fast and easy device trials that support everyone involved in the AAC user’s journey, helping to ensure AAC access beyond initial setup. Not only does Lingraphica provide instruction and guidance during the device trial, Lingraphica also offers group Zoom sessions to practice skills in group zoom sessions called Join In AAC, and one-to-one Communication Coaching once a user receives their own device. These free coaching sessions allow users and their communication circle to practice skills they need help with, try new implementation strategies, and continue customization once the trial is over and even if they are no longer seeing an SLP. Sessions are always available, no matter how long it’s been since a user received their device.

CONCLUSION: CLOSING THE GAP REQUIRES SYSTEMS, NOT JUST BELIEFS

Neurodiversity-affirming AAC is not achieved through good intentions alone. It requires tools and systems that support access, customization, implementation, and long-term use.

Lingraphica Hub helps close the gap between:

- Values and action
- Recommendations and access
- Device provision and meaningful communication

“When systems support values, neurodiversity-affirming care becomes sustainable — not aspirational.”

For autistic communicators, this means more than improved communication. It means autonomy, participation, and respect. That is the solution.

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Supporting AAC Users

Through Improved Interagency Collaboration

Summary: This article will describe a student-centered approach to improving interagency collaboration in AAC service delivery. It will feature the Student Communication and AAC Portfolio, which addresses barriers to collaboration identified through needs assessments and interviews with a school system's AT team and SLPs delivering AAC services at an outside agency. This article will describe common interagency collaboration breakdowns, summarize insights from the needs assessment and interviews, and detail a case using the portfolio.

INTRODUCTION

For children who rely on augmentative and alternative communication (AAC), access to comprehensive communication systems, services, and supports is often provided by professionals working in various settings. These professionals, working in schools and other agencies, often follow different service delivery models, policies, and philosophical frameworks. Even when these various professionals share a commitment to a child's success, limited communication and collaboration are the norm, which negatively impact AAC outcomes (Lund & Light, 2007). Improved interprofessional and interagency communication and collaboration could improve these outcomes.

Across speech-language pathology and related fields, there is substantial research highlighting the value of interprofessional collaboration (e.g., Ogletree et al., 2017; Wallace et al., 2022).

Interprofessional collaboration is described by the World Health Organization (2010) as practice characterized by professionals with different backgrounds working together with children, families, and caregivers to deliver high-quality care. Within the area of AAC, prior work has identified common barriers and facilitators to effective AAC service delivery (e.g., Gohsman & Johnson, 2023; Lund & Light, 2007), including challenges with collaboration among professionals from different backgrounds within single school teams (Chung & Stoner, 2016). However, little attention has been given to professional collaboration across systems or agencies, particularly within the United States. Alant et al. (2012) explored interagency support for a student receiving services from a university speech-language pathologist (SLP) and a school SLP. In their reflections, the SLPs and child's parent emphasized the critical value of continued interagency



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collaboration. Alant and colleagues reported positive results in AAC and communication outcomes for the child when both teams were committed to an interagency, collaborative approach to intervention. This highlights the need for more tools and strategies that support successful collaboration across agencies providing AAC services to school-aged children and youth.

The purpose of this article is to describe a practical, student-centered resource, the Student Communication and AAC Portfolio, which addresses this need for more tools and strategies that help professionals collaborate across agencies to support children and youth who need and use AAC. This portfolio was developed by the coauthors of this article after working with an assistive technology (AT) team in a local school system and SLPs delivering AAC services through the outpatient clinic at a local medical center. The coauthors conducted a needs assessment and interviews to gather the data that informed the development of the portfolio.

The Student Communication and AAC Portfolio was specifically designed to support improved coordination, communication, and collaboration between schools and outside agencies that support AAC users across settings. Most importantly, the Student Communication and AAC Portfolio may help various providers think about their shared role in providing consistent and effective AAC services to the children and youth they serve, regardless of the setting in which they work.

BACKGROUND: THE COMMUNITY ENGAGEMENT PROJECT AND BEYOND

The Student Communication and AAC Portfolio emerged from a semester-long community engagement project involving the coauthors. Community engagement is defined as “an ongoing, evolving process of multidirectional communication with and for people to solve the problems and address the concerns that matter to them ... The ultimate goal is to learn, implement, and disseminate the practices of equitable partnering [and] influence policies, programs, and practices for the betterment of the community” (Michener et al., 2025, p. S104). A key principle of this approach is that engagement is initiated by community members, rather than researchers, consultants, or other outside experts. This helps to ensure that the work is grounded in practical, real-world needs. We (the coauthors) entered the work knowing we were interested in understanding more about AAC service delivery in the community settings, but we worked diligently to encourage our community partners to select topics, guide discussions, and ultimately define their needs rather than imposing our own ideas and goals.

The community engagement project began with initial conversations with partners on an AT team in a local school system. After the conversations, we crafted a needs assessment to determine systems currently in place, as well as areas of potential growth specifically identified by community

partners (O'Donnell, 2024). The AT team completed the needs assessment, which included questions about the AT team's perceived strengths (i.e., “what works well for your team”); areas for improvement (“what do you see as an opportunity for growth or improvement”); and unmet student needs (“are there students whose needs are not being met? If so, what are those needs”).

AGENCY INTERVIEWS

One of the most prominent concerns identified by the AT team was difficulty in communication and coordination between their team and outside AAC service providers. In response, we reached out to the school AT team to request a follow-up interview regarding their concerns with connecting with outside agencies. We also used our professional contacts to reach out to a team of SLPs at a local medical center to participate in an interview. The SLPs at the medical center work primarily with preschool and school-aged children, with a focus on AAC. The SLPs at the medical center also expressed difficulties connecting and collaborating with school AAC teams. Table 1 summarizes the results of the interviews with a specific focus on the professionals' perspectives of their individual and collaborative efforts to deliver AAC services.

Table 1
School AT Team and Outside Agency AAC Team Perspectives on Collaboration

Area of AAC Service Delivery	School-Based AT Team Perspective	Outside Agency AAC Team Perspective
Initial Contact and Communication	• Difficulty identifying which outside agency or clinician is working with a student; often unaware that an AAC evaluation or device trials have begun until late in the process • Documents, papers, and other details get “lost,” impacting opportunities for follow up	• Difficulty determining whom to contact within school systems • Frustration resulting from “playing phone tag” • Many barriers to address simply to secure initial contact (i.e., getting a parent signature for a release of information)
Time and Workload	• Perception that outside agencies have more time • Large caseloads make it difficult to find time for collaboration and follow up with outside agencies	• Outside agencies have large caseloads and productivity requirements • Insurance requirements and documentation expectations limit time available for outreach and collaboration with schools and other agencies



Role Clarity and Responsibilities	• Uncertainty about outside agency goals and recommendations • Uncertainty resulting from case-by-case differences and limited clarity regarding ownership and responsibility for speech generating devices (e.g., school device vs. a device purchased through insurance or other funding sources)	• Uncertainty about school policies, AAC responsibilities, and the scope of services schools can or do provide • Understanding that responsibilities differ depending on specific school districts and available resources (e.g., presence of an AT team)
Caregiver Involvement	• Reliance on caregivers for information about outside services due to lack of direct contact • Frustrated with limited or incomplete information that is available when parents must serve as the intermediary	• Belief that parents or caregivers are necessary to create and support connections • Reliance on caregivers to provide contact information for their child's school team and to facilitate initial connection • Belief that caregivers need information and support to navigate communication, including understanding what school services their child receives and the scope of services that may be available
AAC Use Across Environments	• Focus on AAC supporting curriculum access, classroom participation, and educational goals	• Focus on AAC supporting functional communication in home and community contexts • Have an emphasis on caregiver coaching
Setting Specific Policies and Constraints	• Face numerous constraints related to district policies (e.g., device use at home, device programming and management, school-age to transition preparedness, and access to AAC)	• Have limited exposure to school-based policies • Understand that different school districts have unique policies and constraints around device use at home, access, etc. • Report that some school districts refer to outside agencies for AAC evaluation and therapy. Teams hear statements such as "my child's school doesn't do AAC."

Perceptions and Beliefs Around Collaboration	• Frustrated when efforts to collaborate feel one-sided • Believe others fail to put effort into collaboration; effort should be the norm • Face misconceptions from outside agencies around AAC competency and purpose of AAC implementation in schools • Experience tension or feel reluctant to collaborate; yet strongly value and desire to collaborate with others • Believe collaboration has been helpful, yet remains rare	• View collaboration as exciting and encouraging but difficult to establish • Have a strong desire and willingness to collaborate more frequently • Want to support school staff seeking AAC competency but feel uncertain about how to provide education and support • Believe limited time is a barrier • Believe frequent parent participation in sessions promotes collaboration • Want to empower parents to be point of contact
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In addition to learning about the perspectives of the service providers across agencies, the interviews revealed that the teams were interested in collaborating and valued collaboration deeply. However, each team identified numerous barriers that made collaboration difficult, regardless of individual willingness and readiness. When asked about practical ways to support collaboration across agencies, both teams identified similar areas of support. The school AT team stated the need for (a) clear systems for information sharing across organizations, (b) a way to define roles and responsibilities on a case-by-case basis, and (c) parents to serve as the main contact between organizations. The SLPs on the outpatient AAC team at the medical center echoed these needs. They also stated that tools to support efficient collaboration from the beginning were required, but the tools could not add excessive paperwork or procedures. Discussion and collaboration with each team led us to develop the Student Communication and AAC Portfolio.

THE STUDENT COMMUNICATION AND AAC PORTFOLIO

The Student Communication and AAC Portfolio is a flexible, practice-informed tool that supports collaboration and communication across agencies while honoring differences across those agencies. It is designed to guide teams in their efforts to collaborate at multiple points in the AAC process, from initial evaluation through ongoing intervention. A hard copy of the portfolio is intended to follow the child across settings. Alternatively, a digital version could live in a shared online space where all team members can access and contribute. The portfolio may be accessed here, <https://go.unc.edu/AACportfolio>.

The structure of the Student Communication and AAC Portfolio reflects the priorities identified during the interviews—clarity, transparency, and shared ownership of AAC implementation. The sections of the Student Communication and AAC Portfolio are:

- **Student Information:** Provides demographic information about the student.
- **School Team and Outside Agency Information:** Provides agency contact information and outlines student goals.
- **General Roles and Responsibilities:** Identifies who will be responsible for the services the student requires.
- **Communication and AAC - Current Use, Needs, and Goals:** Provides information on the student's current use of communication and AAC, as well as present and future needs across home, school, and community settings.
- **AAC System Acquisition Information:** Provides information on what the student needs to acquire a device and a breakdown of responsibilities.
- **Plan for Ongoing Interagency Communication:** Provides space for documenting how agencies will plan for ongoing communication.
- **Shared Interagency Notes:** Provides information on current activities and goals that allow other parties to support and carry over efforts.
- **AAC Data Collection Form:** Provides a way to share data and other notes across providers and parents.

LAYLA'S STORY



To illustrate how the Student Communication and AAC Portfolio can be used to support collaboration across agencies, meet Layla. Layla is a 7-year-old student attending a large, urban school district. She communicates primarily with gestures, vocalizations, and body movements. She enjoys being active, and she loves to swing and jump on the trampoline. She does not yet have access to a consistent and robust AAC system. At her previous school, she was provided with a binder filled with individual picture symbols, and instruction focused on exchanging the symbols for desired items and activities. However, this did not meet the full scope of her communication needs, and she did not use the binder outside of structured activities that offered clear choice-making opportunities. She often seemed frustrated, as evidenced when she threw the binder or

pushed it away when she did not experience immediate success. Her father wanted to help her feel less frustrated and support her in navigating AAC across home, school, and other settings. In addition to school-based SLP services, Layla's father secured services from a new SLP in an outpatient medical practice known for its AAC service delivery.

The following demonstrates how key sections of the student portfolio were used by the school team and the SLP at the medical center to address common barriers identified in Table 1 and eventually improve communication and AAC outcomes for Layla.

BUILDING CONNECTIONS BETWEEN TEAMS

School Team Information	
Teacher Name and Contact Information:	
School-based Speech-Language Pathologist Name and Contact Information:	
Other Related Service Providers' Name and Contact Information (e.g., OT, PT, TVI)	
Does your school have an Assistive Technology team: YES or NO	
If yes, Main Person and Contact Information:	
Are AT services indicated on the student's IEP? YES or NO	
If so, describe the overall goals of the AT services the student receives.	

Outside Agency Information	
Agency Name:	
Private or Outside Agency Speech-Language Pathologist Name and Contact Information:	
Additional Outside Agency Name and Contact Information:	
Describe the overall goals of the SLP services this student receives from the private or outside agency SLP.	

School Team and Outside Agency Information

A barrier identified by the professionals who completed the needs assessment and interview was difficulty identifying and contacting the appropriate team members from other agencies. In Layla's case, the SLP initially relied on contact information provided by Layla's father, who was unaware of the school's AT team. When Layla's father asked Layla's school team to help him complete the contacts section of the portfolio, they included contact information for the AT team. This then supported direct contact between the outpatient SLP, the school-based SLP, and the school AT team. This contact was critical, given that the AT team was a central part of the school system's efforts to coordinate AAC services. By using the portfolio to consolidate all team contacts in one location, the portfolio supported direct communication across providers, reducing the reliance on the caregiver to initiate and uphold connections.

CLARIFYING ROLES AND RESPONSIBILITIES

General Roles and Responsibilities
What services does the student need after acquiring the device? Who will provide the services?
Roles and Responsibilities of School Team:
Roles and Responsibilities of Outside Agency:

General Roles and Responsibilities

Unclear expectations across systems can lead to duplicated efforts, gaps in services, or unexpected surprises. For example, a student may arrive at school with a new device to trial, or a school team might provide a school-issued device without the knowledge of an outside SLP. In Layla’s case, the SLP at the medical center clinic completed her initial AAC evaluation before the school knew of her involvement. Layla’s father initiated the evaluation after her pediatrician provided a referral. Layla’s father knew that she was receiving services in school, but he was uncertain about navigating and coordinating an AAC evaluation through the school system. In the absence of coordination between the outpatient SLP and Layla’s school, everyone worked separately, assumed redundant roles and responsibilities, and duplicated many efforts. When the portfolio was initiated by the SLP in the outside agency, the service providers had a shared space to define roles, which supported shared and coordinated responsibility and minimized the duplicated efforts.

UNDERSTANDING CURRENT COMMUNICATION AND AAC USE ACROSS SETTINGS

Communication and AAC: Current Use
General Communication and AAC Use:
Home:
School:
Community:

Communication and AAC - Current Use

Teams often lack a shared understanding of how a student communicates across environments. In Layla’s case, previous efforts to support her communication at school using symbols organized in a binder did not meet her communication needs. The binder was often left at school or stayed in her backpack at home because it did not support her communication. At home and in the community, Layla communicated with her dad using a range of gestures and vocalizations. She reached for her dad’s hand to direct him and when she needed assistance or wanted to show him something. Though these means supported Layla in expressing basic wants and needs, her father, her school

team, and the new SLP at the medical center clinic all wanted to support her in successfully communicating for a broader range of purposes, with a broader range of partners.

The Student Communication and AAC Portfolio provided a way to document Layla’s communication across settings. It helped her school team recognize how she is currently communicating across settings and gave everyone an opportunity to reflect on their goals for Layla’s future communication.

AAC NEEDS AND GOALS

Communication and AAC: Needs
General Communication and AAC Needs:
Home:
School:
Community:

Communication and AAC: Goals
General Communication and AAC Goals:
Home:
School:
Community:

Communication and AAC - Needs and Goals

Layla’s father had very clear goals for his daughter, and it was important for the school team and the SLP from the outside agency to consider the overlap between his goals and their own goals. For example, his primary goal was to identify a system that would increase Layla’s communication and reduce her frustration. He also had goals related to school success and comfort within community settings. In contrast, the school team had goals that emphasized Layla’s success with her educational program. Though the goals appeared quite different initially, working together to document and understand helped the school team recognize that they could address Layla’s father’s goals in the context of school interventions and services. It also helped the SLP at the outside agency work to center the father’s goals while providing play-based therapy with child-directed activities and parent coaching.

Though Layla did not have the communication skills to allow her to express her own goals, it is critical to consider the individual using AAC and take time to understand goals and needs most important to them. In Layla’s case, it was clear that she had developed ways to meet her goals regarding expressing her wants and needs. The teams wanted to support her in developing skills that helped her meet goals around reducing frustration and increasing connection at home, school, and in the community.



AAC EVALUATION AND ACQUISITION

AAC System Acquisition	
If the student does not yet have or use an aided AAC system:	
When will the initial AAC evaluation take place?	
Who will provide the initial AAC evaluation?	
Who will support the student in exploring the device(s)? How will you determine which devices to explore?	
Who will gather information about device use? How will you gather the information?	

AAC System Acquisition Information

The partners on the school-based AT team and the SLPs at the medical center also identified the AAC evaluation and device acquisition process as a common point of breakdown in communication and collaboration. For Layla, her AAC evaluation and subsequent steps were initiated through the SLP at the outside agency without coordination with the school team. Establishing contact was difficult on both sides due to barriers with making an initial connection. If the portfolio had been initiated earlier, it could have helped to support transparency in timelines, responsibilities, and decision-making throughout the process. For Layla, the portfolio eventually helped members of her school team work with the SLP who completed the AAC evaluation to document device trial successes and challenges, which informed final decisions about device selection and set-up.

PLANS FOR ONGOING COMMUNICATION AND INFORMATION SHARING

Plan for Ongoing Interagency Communication
Plan for ongoing communication between all parties after the device has been acquired.
Who will initiate communication?
How will all parties communicate? (e.g., email, notes sent with portfolio, Zoom meetings, etc.)
How often will all parties communicate?
When will all parties review/revise the Communication Portfolio?

Shared Interagency Notes		
Plan for shared notes between all parties after the device has been acquired. Share current activities and goals and provide information that would allow other parties to carry over the efforts.		
Note/Update	Date	Person/Title/Agency

Plan for Ongoing Interagency Communication and Shared Interagency Notes

Initial contact alone is not sufficient to support collaboration across teams. For Layla, early communication between her school providers and the outside SLP was dependent on her father. Because he did not know whom to contact on the school team, both sides were left with gaps and questions. The portfolio could have been used to establish expectations from the start to support consistent communication and structured follow up across team members.

In general, shared documentation is required to support continuity across settings. In Layla’s case, information about her AAC evaluation, experience with different systems, weekly therapy notes, and ongoing data collection were not shared across providers early in the process. Likewise, the outside SLP did not have information regarding Layla’s school services. When the portfolio was implemented, it provided support for documenting and sharing ongoing updates, exchanging data collection, and allowing the school team and outside SLP to dynamically build on one another’s observations over time.

Layla’s case is representative of many of the barriers identified through the needs assessment completed by the school system AT team and the SLPs providing outpatient AAC services at the medical center. Though these professionals shared a commitment to supporting communication for the children and youth they serve, the absence of systems to support ongoing collaboration and communication poses significant issues. The Student Communication and AAC Portfolio described in this article is one example of a tool that can be used to initiate and sustain interagency collaboration to improve outcomes for children who use AAC. The portfolio is intended to offer a practical, flexible example to address challenges identified by professionals who want to work collaboratively but face numerous barriers. For the teams involved in this community engagement project, the portfolio provides a solution that allows them to achieve their own goals to promote and sustain effective interagency collaboration as they provide AAC services for children and youth.

CONCLUSION

The work described in this article represents an initial step toward improving interagency communication to support AAC users. The Student Communication and AAC Portfolio is a tool designed to support school and outside agency teams in their effort to collaborate across multiple points in AAC service delivery. It is important to note, however, that the Student Communication and AAC Portfolio was developed based on the perspectives, experiences, and needs of a single school-based AT team and SLPs from a single outside agency. Agencies will differ in various ways from those included in this work, and some school systems may not have a dedicated AT team or systems that would support the implementation of the portfolio. However, many of the challenges and themes identified in this work align with concerns frequently reported in the AAC field and may be



applicable across a wide range of contexts. Future efforts will focus on gathering input from additional school systems, private agencies, and stakeholders, including caregivers and AAC users themselves, to further refine the portfolio.

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We Built an AAC App in a Week: What Should We Do Next?

Summary: This article will describe the development of a prototype AAC application created during a one-week interdisciplinary hackathon and will explore the clinical questions that emerged from this rapid design process. It will review the AAC ecosystem, including AAC users, communication partners, environments, and tools, as well as perspectives on language development and communication diversity. Finally, it will examine implications for future AAC innovation, highlighting trans-disciplinary collaboration, neurodivergent leadership, and user-centered design.

Option Three Inc. is building an AAC application, GuLP. At the time of publication, GuLP is in beta testing and is available at no cost to the initial cohort of participating speech-language pathologists.

OUR STORY

What happened when three neurodivergent speech-language pathologists specializing in augmentative and alternative communication (AAC) complained often enough about the limitations of existing communication tools? As it turns out, someone was listening.

The conversation began as many do among clinicians: exchanging frustrations about the amount of time spent customizing devices, navigating workarounds, and trying to fit diverse communicators into systems that were never designed with them in mind. When one of our spouses, then a software engineering student, overheard these conversations, he brought the problem to his fellow classmates. Fueled by real-world experience and the desire to apply universal design principles in action, these computer science students and their AAC SLP collaborators entered, and ultimately won, a hackathon at Sacramento State University. This whirlwind experience offered



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BACK TO
CONTENTS

a glimpse of what it can look like when AAC is designed for and with neurodivergent users, rather than retrofitting existing tools designed around existing frameworks.

We expected to spend the week explaining AAC to the software engineering students, but we spent it learning alongside them. The speech-language pathologists on our team knew what features were clinically necessary, but they did not always know what was technically possible within an app framework. Meanwhile, our developers could build remarkable, highly efficient code, but they needed deep clinical context to understand why certain features were vital for users, rather than a standard layout. They quickly challenged current practices and assumptions we carried for years. Why hasn't this been done before? Why is it so difficult to customize devices? Why do communicators have to fit the tool instead of the tool fitting them?

Our “why” questions turned into “what if’s”...What if AAC systems were designed to be inclusive of different language learning styles? What if parents felt well-equipped to provide AAC interventions in their home? What if clinicians weren't overwhelmed with feature matching or personalization and customization of devices? What if we could experience language differently while using AAC? What if an AAC system naturally fostered community and inclusive belonging for all types of communicators? And perhaps the biggest question of all: What if we dared to build something different?

PATHWAYS TO LANGUAGE DEVELOPMENT AND COMMUNICATION DIVERSITY

Before discussing AAC design, it is important to ground ourselves in what we know (and do not know) about language development. No singular theory fully explains how humans learn to communicate. Rather, language emerges through an interaction of biological, cognitive, social, and environmental factors and can be described through an interplay of various theories of human development (Loncke, 2008; Sutton, 2008).

- Vygotsky's social interactionist theory and Bronfenbrenner's ecological systems theory: Language is not learned in isolation; rather, it is learned through social interactions within the contexts of families, communities, and cultures.
- Skinner's behaviorist theory: Motivation affects learning. Knowing what motivates a child can help communication partners to scaffold language learning and map language onto meaningful experiences.
- Piaget's cognitive theory and emergentist theory: Language development and cognition develop in tandem and build on each other; language development helps build conceptual thought and cognitive development. Conceptual understanding, sensory experiences, and regulation influence how children make sense of the world around them.

- Information processing and connectionist theory: Cognitive development in turn helps build language, and language is learned through patterns and repetition with variety.

Against this broader backdrop, clinicians and researchers have discussed analytic and gestalt language processing as frameworks for describing observable patterns of language use. Analytic processing begins with single words that are gradually combined according to grammatical rules. Gestalt processing starts from whole chunks of language such as scripts or phrases that carry meaning and intonation as a whole and may later become more flexible and generative. Rather than treating these as competing developmental theories, we use them here as descriptive categories of observable communication. For the purposes of this article, we use the term gestalt to refer to meaningful chunks of language that may be important for some communicators. Our recommendations are not based on adherence to a prescribed developmental sequence or theory; rather, they are grounded in thoughtful feature matching and responsiveness to the communication patterns of the individual using AAC.

For some, scripts and repeated phrases may represent an important avenue for connection and expression. An autistic child who frequently uses echolalic speech, for example, may be communicating preferences, emotions, intentions, or memories tied to specific experiences. Our role is not to extinguish these forms of communication, but to seek to understand the communicative intent they represent. In this way we can support the development of increasingly flexible language that allows the child to have agency in their use of both familiar phrases and self-generated novel utterances.

From an AAC design perspective, the key question is not classification of gestalt or analytic processing, but access: does the system support both generative language and whole-phrase communication as valid and usable forms of expression?

WHY THIS MATTERS

The “curb cut effect” describes how accessibility features designed for people with disabilities end up benefiting a much larger demographic, or even society as a whole. This originated from the late 1960s and early 1970s, rooted in the US disability rights movement. What started as a modification to curbs for wheelchair users turned out to serve everyone: parents with strollers, travelers with luggage, riders on bikes, and many others.

Similarly, an AAC tool built to support phrase-based language serves the communicators who most need it, and the same features, flexible phrase and word access, intonation, play, and progression, improve the experience for all AAC users. Ultimately, contemporary AAC frameworks emphasize individualized, participation-focused intervention that is responsive to the strengths, needs, communication styles, and

lived experiences of the communicator and their communication partners (Light & McNaughton, 2014). Therefore, robust AAC systems must provide features that visualize language as a whole (commonly used phrases, emergency phrases, gestalts, visual scene displays, video visual scene displays) and as parts (words, word parts, word forms, tense markers, grammar markers, letters, letter sounds). Providing access to multiple pathways for communication allows AAC users to draw upon the strategies that best meet their needs in a given moment. When individuals have access to a full range of communication options, intervention can focus on what matters most: building opportunities for connection, expanding participation, and supporting authentic communication within shared interactions. Research consistently demonstrates that AAC interventions can support communication and language outcomes when systems are individualized, responsive to the communicator's needs, and implemented within meaningful interactions (Drager, Light, & McNaughton, 2010). The AAC device itself is simply one tool that helps make those opportunities possible.

THE AAC ECOSYSTEM

Communication can be described through a range of metaphors, including: sending and receiving messages, building and co-constructing meaning, bridging connections between people, or embarking on a journey to shared understanding. When communication breaks down, the causes are rarely singular; instead, they often reflect multiple barriers interacting with each other. To effectively identify and address these challenges, it is essential to look beyond the individual and consider the broader context in which AAC operates.

➔ We propose the AAC ecosystem as a practical lens for evaluating whether a communication system truly fits the individual over time. The AAC ecosystem comprises four key components: 1) the AAC user, 2) the communication partners, 3) the tool or AAC device, and 4) the environmental context in which these elements exist.

➔ Speech-language pathologists and team members who work with AAC users spend a significant amount of time making adaptations to environments, curriculum, goals, and tools in order to attempt to overcome barriers to communication. These adaptations are part of an ongoing process of aligning the child's AAC ecosystem so that they can communicate as effectively and independently as possible across contexts. When each component of the ecosystem is thoughtfully and intentionally addressed, communication becomes more accessible, interactions feel more successful, and opportunities for authentic participation expand. We can accomplish this through training and coaching the communication partners, customizing and personalizing the AAC system to reflect the user's individuality and culture, providing aided language stimulation, building the AAC user's skills in device use, and creating a supportive environment for meaningful participation.

➔ Often, despite our best efforts, there can be barriers within the ecosystem components. System-level constraints in AAC design can contribute to mismatches between communicative intent and available expressive options, reinforcing the importance of flexible, user-responsive intervention approaches (Vento-Wilson, 2024). The device may not align with how the child communicates or their preferred communication methods, which can affect the interactions between communication partners and the child as well as contribute to device abandonment. This dynamic unfolds within the context of the environment that encompasses these elements, including home, school, and community. That is why we have decided to focus on designing and building a tool that honors what research, clinical expertise, and lived experience has informed us about how we learn and use language.

Most traditional AAC systems are designed based on single words. A communicator who leans heavily on gestalts, and who has a co-occurring language disorder that requires AAC, feels the absence of support for phrase-based communication most sharply. The result is a tool mismatch, or worse, device abandonment, that can affect language development and delay opportunities for connection. A central design challenge in AAC is therefore not simply vocabulary selection, but ecosystem fit: how well the system supports the user's communication patterns, partners, and contexts over time.

CUSTOMIZING CURRENT AAC TOOLS

There is no single best AAC tool. The best system evolves with the person, supports their access and language needs, and fits with the other elements that are in their AAC ecosystem.

Customization is not a one-time setup. It is an ongoing, incremental process that involves interviewing and collaborating with various members that are a part of the AAC ecosystem. A tool that fits a child in early language development can gradually stop fitting as their language and interests evolve. It is essential to build in space for that growth from the start, so the system can flex with the child rather than holding them in place. Feature matching is continual, and it follows the child. The work is iterative, and it is always in service of connection. Listed below are some customizations we have utilized with existing AAC apps and that have informed the development of our prototype AAC app, GuLP.

VOCABULARY ORGANIZATION

Most AAC systems organize vocabulary primarily through semantic categories or motor-planning layouts. These structures are evidence-informed and support efficient navigation and retrieval. However, they often reflect adult conceptual organization rather than lived communicative experience. Research shows that young children tend to organize vocabulary around events and experiences rather than taxonomic categories (Fallon, Light, & Achenbach, 2003). For



users whose communication is anchored in experience-based or scripted language, traditional categorical organization may not provide intuitive access to meaningful phrases. Gestalts are whole phrases tied to specific, often emotional experiences, and their meaning lives in the event, not in the category. A system that files language by part of speech or semantic group offers no natural home for an experience-bound phrase, and the communicator is left navigating an organization built on a logic their language does not follow.

How to customize:

- Make meaningful phrases and scripts accessible in as few selections as possible
 - Create a dedicated "My Phrases" folder that the child and partners can expand as new gestalts/messages are learned
- Organize vocabulary pragmatically so it mirrors how language is used, such as adding folders for requests, protests, comments, and self-advocacy purposes
- Keep core words in stable, motor-consistent locations as phrase access is added
- Add age-respectful vocabulary that grows with the AAC user

RECORDING, INTONATION, AND THE HUMAN VOICE

A gestalt carries its meaning in how it sounds: the rise and fall of a phrase, the exact melody from the voice that first said it, or the song it came from. Stripped of intonation and rendered in a synthetic voice, a gestalt can lose the very quality that makes it relevant to the child. For a communicator whose language is built from emotionally anchored chunks of language, the ability to capture and replay language as it was actually heard is what keeps the gestalt intact and meaningful.

How to customize:

- Allow the AAC user to be involved in choosing which device voice to use
- Record speech, audio, music, phrases, sound effects, and intonation, so a gestalt is captured as it is actually said
- Give access to a voice recording app and a camera, so the people and moments that anchor a gestalt stay available
- Visual Scene-Based Supports

Many early gestalts come from immersive, visual experiences: a favorite show, a video watched on repeat, or a moment shared with a caregiver. Grid displays of isolated symbols can separate a phrase from the scene that gave it meaning. Visual and scene-based supports keep language embedded in context, letting a child reach a gestalt through the experience it belonged to.

How to customize:

- Use visual scene displays and video visual scene displays with hotspots
- Enable playback of songs, videos, and gifs, which often carry early gestalts
- Pair animated symbols with spoken phrases and exposure to text
- Offer a whiteboard to draw images that represent the experience from where the gestalt or phrase originated

LANGUAGE PLAY AND EXPERIMENTATION

Language develops through play. Children try gestalts on, mix them, and gradually pull them apart into pieces they can recombine. Creating a space to play with language gives the child a place to do the natural work of mitigation, trying out and reshaping their gestalts without pressure to produce a "correct" utterance.

How to customize:

- Encourage editing of the message in the message bar
- Highlight the spoken word in the message bar as it plays

CREATING NEW TOOLS: TRANSFORMING A CLINICAL CONCEPT INTO A STARTUP

Throughout the hackathon experience, we found that the frustrations we vented to each other soon transformed into a blueprint we could follow. We left feeling inspired to continue working together to create a new kind of AAC tool. We started Option Three because we wanted to build something fundamentally different: an AAC system that supports all language development styles and needs, empowers parents at home, reduces clinical overwhelm during feature matching, and fosters community.

➡ That being said, we had no business background and very little idea of what we were doing. Starting a business and building a product is genuinely intimidating. The encouraging part is that the path from practitioner to builder is more accessible than it may seem, particularly for clinicians who are already skilled at identifying problems, synthesizing evidence, collaborating with stakeholders, and adapting based on outcomes.

Although we did not intentionally set out to follow a specific innovation framework, many of the strategies we relied on closely mirrored principles found in design thinking and lean startup methodology. Design thinking emphasizes understanding the lived experiences of the people you hope to serve, defining problems clearly, involving end-users throughout the design process, and learning through rapid prototyping and iteration (IDEO, 2026). Lean startup methodology similarly encourages innovators to test assumptions early, seek evidence before scaling, and use feedback to guide continuous improvement

rather than striving for perfection from the outset (Pratt, 2023).

➔ Importantly, these approaches reflect the same evidence-based, person-centered mindset that is rooted in high-quality assistive technology (AT) practice. AT professionals routinely identify unmet needs, gather information from multiple perspectives, trial interventions, monitor outcomes, and adjust recommendations accordingly.

The following framework outlines the design principles, mindset shifts, and practical resources that helped us navigate the unfamiliar world of innovation and entrepreneurship.

1. Define the problem

To build impactful assistive technology, you must clearly define the specific gap you are addressing. Let academic research, clinical expertise, and, most importantly, the perspectives of disabled individuals and end-users shape your understanding of the actual problem.

2. Validate the problem

Test your assumptions by engaging deeply with the people closest to the problem: end-users, caregivers, and clinicians. Seek unbiased, honest feedback rather than reassurance. Focus on understanding how people currently navigate the challenge, where existing solutions fall short, and whether the problem is significant enough to warrant a new approach. It can be tempting to jump immediately into describing your invention, but taking the time to articulate the problem independently of your proposed solution often reveals important nuances and unmet needs.

3. Generate solution hypotheses

Form clear assumptions about how your product might address the defined problem, but hold onto them loosely. In the early stages of development, your ideas are simply hypotheses to be tested rather than final answers. For GuLP, we treated our initial ideas about phrase-based navigation, media integration, and automatic customization as early design theories to be explored and refined through feedback from clinicians, families, and AAC users.

4. Prototype quickly

A basic, working prototype built in a week will often teach you more than months of theoretical planning. Build something rough enough for people to react to, put it in front of real users, and let their experiences shape the next iteration. The purpose of an early prototype is to accelerate learning, not to build the final product.

5. Seek evidence of solution traction

➔ Traction suggests that your solution is resonating beyond your immediate team. It signals that people are willing to invest their time, expertise, or resources because they believe

your approach addresses a meaningful need. Early traction might take the form of committed pilot users, engaged co-designers, grant funding, waitlists, or enthusiastic early adopters. While traction does not guarantee long-term success, it can provide valuable evidence that your solution is worth continuing to develop.

6. Use low-cost and free resources

- Community resources: Explore public libraries for free business workshops and complimentary access to market research and startup databases.
- Legal and structural support: Consider local university law clinics for low-cost intellectual property or incorporation guidance, and seek out grant funding and cash prize opportunities to support early development.
- Digital tools: Utilize free platforms for brainstorming, project management, communication, and outreach to keep overhead low.

WHAT'S NEXT?

Our hackathon story is a story that surprised even us: in the span of one week, our team of nine built a functional AAC app prototype. The technology itself was not the most remarkable part of the experience. What stayed with us afterward mattered the most: Just because we can build AAC tools quickly, should we? And if we do, what responsibilities come next?

The rapid emergence of artificial intelligence, low-code platforms, and increasingly accessible software tools means clinicians may no longer have to wait years for commercial development cycles. But speed alone does not guarantee meaningful change or increased access. Innovation in AAC is a technical challenge, but it is also a clinical and ethical one. We learned that ongoing iterative design and beta testing are essential to ensure that the feedback, voices, and perspectives of SLPs, caregivers, team members, and AAC users themselves are prioritized and centered in the pursuit of a robust AAC app that aims for long-term usability.

Ultimately, designing for both generative language and experience-based communication is not a theoretical preference; it is a matter of access. When AAC systems support multiple pathways for expression, they expand communicative competence rather than constrain it. Neurodivergent leadership, lived experience, and clinical expertise are assets that help shape the design and development of inclusive AAC tools. Let's continue to dare to dream and continue scaling short-term innovation into sustainable systems change in the realm of assistive technology.



THE TEAM

The prototype described here was built by a multidisciplinary team of three neurodivergent speech-language pathologists and six student software engineers.

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GuLP AAC

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