

Closing The Gap

Solutions

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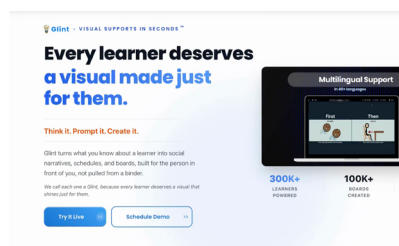
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The "I Want" Machine

Why AAC Has to Solve for Conversation, Not Sentences - and What Happened When One Dad Built His Son a Better One

Summary:

A teacher asked her class what makes rain. Not one AAC device moved — nobody had thought to program those words in. Shay Cohen, father to a non-speaking son, will explain the flaw: AAC is built to make sentences. Conversations are something else entirely. So he founded Verballi and built a new type of AAC, dedicated to conversation. He will also invite readers to build their own app, with a guide to doing it in thirty minutes using free tools.

Imagine you're at a holiday dinner with your family. Everyone is talking about the new Spider-Man movie — the one on its way to becoming the most profitable film in history — and nobody at the table can understand why.

But you understand why. You know exactly why. Spider-Man is beloved because Peter Parker is just a regular guy. He has problems with his boss. He has relationship trouble. He can't make rent. He's an ordinary person who happens to have powers — your friendly neighborhood Spider-Man. That's the whole magic, and you're the only one at this table who can put it into words.

So you reach for your AAC and start building the sentence. The words are scattered across pages and folders. You hunt. You tap. You backtrack. And finally — finally — you have it. The perfect sentence.

Too late. The conversation has moved on. Someone is complimenting the chef.

Now switch scenes. You're at school, in science class, and the teacher is introducing a new topic: rain, and how it's made. Oceans. Evaporation. Heat. Everything makes sense — you like science. Then the teacher pauses and asks: "Can anyone tell me one thing we need to make rain?"

You're excited. You know this. You reach for your AAC — your

trusted companion. Your parents updated the vocabulary just yesterday. So why can't I find the words? No evaporation. No ocean. Nothing that lets me show what I know.

The teacher moves on to the next topic.

Hi. My name is Shay Cohen, and I'm a dad to an eight-year-old boy who lives some version of these two scenes every single day. At school they call him "the mayor" — he's charismatic, everyone loves him, and he understands two languages perfectly. He also cannot speak, and he has used an AAC since before he turned two.

TWO SCENES, TWO CONVERSATIONS

Those two scenes are everyday examples of how non-speaking and minimally speaking individuals struggle with the tools we've given them. But the more important thing to notice isn't the struggle. It's how different the two situations are — because what those scenes really describe are two very different **conversations**.

And here's the thing about conversations: they are agnostic to the situation, and shaped by it at the same time. Agnostic, because a conversation is simply how human beings exchange meaning — it happens at the dinner table, in the classroom, at the pool, in the dentist's chair, and it should work in all of them.



SHAY COHEN is the co-founder and CEO of Verballi, the company behind MaTalk AI, an AI-powered AAC app helping non- and minimally speaking children communicate more naturally and independently. He is a product and technology leader with more than 15 years of experience across startups and Fortune 500 companies, including Capital One and Broadcom. Shay is also a named inventor on multiple patents and serves on the Board of Directors of the Bender JCC of Greater Washington. He lives in Potomac, Maryland, with his wife, Anna, their three children—Lia, Matan, and Miley—and their dog, Phoebe. Email: shay@verballi.io

Shaped, because where you are determines what you talk about, which words you need, and how you're expected to sound.

Which leads me to the claim this entire article rests on: an AAC has to help someone have a conversation, not just build a sentence. Those are not the same job. I'll spend the rest of this article explaining why the difference matters more than anything else in this field — and what became possible for my son once we stopped solving the wrong problem.

PART 1: THE "I WANT" MACHINE

My wife and I were frustrated with AAC technology for years. It always felt like it hadn't been designed for conversation. It felt like whoever built it had never actually tried to use it in one.

She has a name for the device. She calls it the "I want machine."

WHAT IS AN AAC?

In case AAC is new to you: it stands for Augmentative and Alternative Communication. The easiest way to picture it is a tablet that works like a keyboard — except instead of letters, the keys are images representing whole words. To say something, the user finds and taps each image in turn. I. Want. Eat. Banana. Because a full vocabulary contains thousands of words, those images are organized into pages and folders that the user must navigate to reach the word they need. And someone — usually a parent, a speech-language pathologist, or a teacher — decides in advance which words go in, and where.

THE TRUTH ABOUT AAC

Which leads to the harsh truth about this technology: an AAC is only as good as the words you pre-programmed into it.

If the words are there and easy to reach, the user can build a sentence. If they aren't, the AAC is a nice-looking tablet full of untapped potential.

Now, back to my wife's name for it — she has a talent for naming things exactly as they are. I remember the first time she said it, because she had described precisely what I'd been feeling for years. We had a carefully configured device, and what we used it to produce were sentences of immediate need: I want juice. I want music. I want outside.

Here's the thing about that: I already knew what my son wanted. I'm his dad. I knew he wanted juice before he ever opened the app. Every parent reading this knows exactly what I mean — you build a private language with your child, speaking or non-speaking, out of years of glances and gestures and the particular way they lean against the refrigerator door. We don't need a machine to tell us our kids are thirsty.

WHAT I ACTUALLY NEEDED IT FOR

What I needed the AAC for was everything else. What did you do at school today? What made you laugh? What are you scared of? What do you think happens next in the story? What did you think of the movie?

That's a conversation. And a conversation was the one thing the device couldn't carry.

MEET THE MAYOR

Let me tell you about my son Matan, because none of the technology talk means anything without him in it.

He's eight, the middle of my three kids — his big sister is turning eleven, his little sister just turned four. We're a bilingual home, Hebrew and English, and he understands both perfectly. He's minimally speaking, and AAC has been part of his life almost since the beginning.

At school, the staff call him "the mayor." Everyone knows him. Everyone loves him. He'll take your hand and walk you across a room to show you exactly what he means. He'll make you laugh without a single word. By any honest measure, my son is a superb communicator.

And he cannot answer the question, "What did you do at school today?"

THE BLACK BOX OF SCHOOL

School is an extraordinary place for a child. They learn, they make their first friends, and for many of them it's the first time they spend hours of the day away from their parents. Of course we want to know how it went.

But school is a black box for parents — which means we cannot program an AAC to support those conversations. We don't know what happened in there. We don't know what was funny, who was unfair, what the teacher said that stuck. We can't pre-load the vocabulary for a day we didn't witness.

I sent my child somewhere for six hours and had no way in afterward. Not because he didn't remember his day. Because the tool in his backpack couldn't carry that kind of conversation.

NINETY MINUTES ABOUT A VOICE

Then there were the IEP meetings. If you work in this field, you've sat through hundreds. If you're a parent, you've survived a few. What struck me, meeting after meeting, was how much of the time went to the device. One meeting ran an hour and a half, and the great majority of it was about the AAC — which pages, which vocabulary, which settings.

I drove home from that one genuinely rattled. Ninety minutes about my son's AAC — a device we describe as his voice. Nobody spends that kind of energy on a person's voice. So why should an AAC be any different?

And underneath it all, the thing every parent in that room feels and cannot prove: he knows more than he can show you. You feel it in your bones. But bones don't move an IEP. Data does. And the tool that was supposed to give him a voice was producing almost no evidence of what he actually understood.

That was the meeting that made me decide to build an AAC for my son. An AAC that would help him fully participate in a conversation — at home, at school, and with peers.

PART 2: NOBODY PLAYS PING-PONG BY ONLY SERVING

WHERE A PRODUCT MANAGER STARTS

Before any of this, this is a good place to explain a bit about my background. I started my career as an electrical engineer, and from there I moved into product management. I've worked for Fortune 500 companies and for startups, and I have a few patents under my belt. Most recently, I joined the board of directors of the JCC of Greater Washington area and its inclusion committee.

As a product manager, my goal is to build products that are a true solution for the customer — not just a great product. That means understanding the customer's perspective and pain points comprehensively: what keeps them up at night. Only then do I move on to designing and building. And to really succeed at that job, you have to be able to observe behavior — how people actually use the product, where they get stuck — find the pattern underneath the struggle, and resist building anything until you truly understand what's wrong.

HERE'S WHAT'S BROKEN

Here is what I found out: AAC solves for the sentence. Life happens in conversation. And those are not the same unit.

Nearly every AAC on the market is, at its core, a keyboard. A sophisticated one — symbol-based, motor-planned, thoughtfully organized — but a keyboard, built to output a well-formed sentence. For building sentences, this is a wonderful solution.

And that's where the first issue is: a conversation is more than building sentences.

THE PING-PONG ANALOGY

Think of a conversation as a ping-pong game:

- You always play with someone.
- You take turns.
- Sometimes you serve — but most of the time, you respond to someone else.

When you serve, you have time to plan. You can organize your thoughts, hold the bat properly, aim, and go. Building a sentence is a lot like serving, and this is exactly where a keyboard genuinely works.

But a serve is not a game. And nobody plays ping-pong by only serving.

A game needs a rally — back and forth, balls hit wide, balls chased down, another turn anyway. And above all, a game needs the other player to stay at the table. That's what conversation is: rhythm between people. It has timing. It has dynamics. Nobody has a conversation with a wall.

Which leads me to another observation. The sentence-first model also carries a quiet cruelty I don't think anyone intended: it makes communication binary. Build the correct sentence

— success. Miss a word, scramble the grammar — failure. The child didn't just make a mistake; they failed at the one thing the machine exists to do.

Now compare that to how you treat a toddler.

A LESSON FROM A TODDLER

My youngest just turned four. When she was learning to talk, she wrecked the language constantly — dropped endings, scrambled word order, invented substitutions. And not one adult corrected her into silence. We were forgiving on purpose, because every adult instinctively knows the rule for new speakers: the goal is not accuracy. The goal is participation. More turns. More attempts. More mistakes. That's how humans learn to talk — by talking badly, a lot, in front of people who let them.

Why would we hold a child using AAC to a stricter standard than a toddler?

Shift the focus from the sentence to the conversation, and everything reorders. A missing word stops being a failure, because the message still crossed the table and the rally is still alive. The partner stays engaged, so the child earns another turn. More turns mean more practice; more practice means growth. The unit of success stops being the perfect utterance and becomes the exchange.

EVERYWHERE, AND RIGHT HERE

Which brings me back to what I said at the start, and lets me finally say it the way I'd put it on a poster:

A conversation is situation-agnostic and situation-deterministic at the same time.

Agnostic, because it has to work everywhere. If a tool only functions in the environments someone prepared for in advance, it isn't a voice. It's a phrasebook.

Deterministic, because where you are shapes what you say. Talking to your teacher is a different register than joking with a friend. December pulls conversation toward Christmas — or toward Hanukkah, depending on the family. Summer is camp vocabulary; September is school vocabulary. The situation sets the topic, the words, the tone — and it changes several times a day, without warning.

A real communication tool has to do both: work in any situation, and know which situation it's in. Static grids can only manage the second — and only when a human predicted correctly, in advance. Prediction always, eventually, fails.

Those observations guided me in building a new kind of AAC — an AAC for conversation.



PART 3: THE ELEPHANT, THE PIG, AND THE DEER

THE ELEPHANT AND THE PIG

So I built one. Not a company — a prototype, for exactly one user.

The idea was almost embarrassingly simple: if the system can hear the question, it has enough context to offer relevant answers. Ask "what animals do you want to see at the zoo?" and it shouldn't offer food. It should offer animals — zoo animals — and let the child choose.

The first time I knew it worked, we were reading *Elephant and Piggie* by Mo Willems. I read the story aloud, and then I asked Matan a question about it: "Who threw the ball — Gerald or Piggie?"

Two images came up on the screen. In that rough prototype, literally just a pig and an elephant.

He picked the right one.

I need you to understand what happened in that moment, because it was two things at once. As a father, I had just had an unscripted conversation with my son about a shared experience — a book we read together. Not a request. Not a script. A conversation.

And as a parent inside the system, I had just produced something I had never once been able to bring into an IEP room: evidence. Reading comprehension, demonstrated, repeatable. The thing I had always known in my bones and could never put on the table. We did it again and again, and it held.

THEN CAME THE "DEER"

We were out in the backyard — me and the kids — when a baby deer leapt the fence and got itself stuck. Everyone's fine; I freed it, and it was reunited with its mother. Afterward, I asked Matan what he saw. Images came up. He chose the deer.

Then I asked: what do you think the deer felt?

He chose "scared".

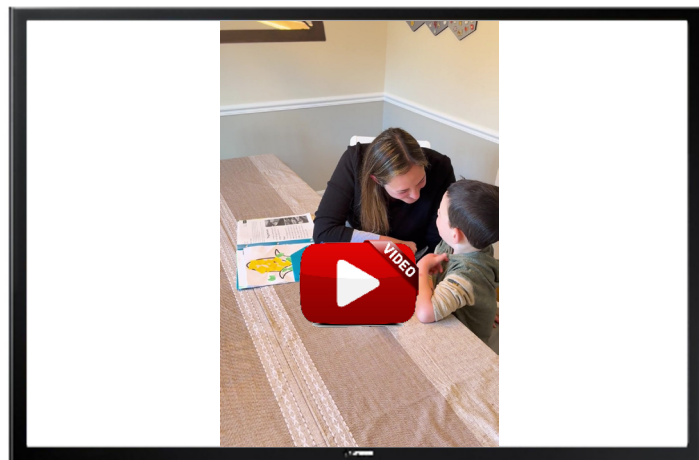
Yes, I told him — you're right. It was scared. And what did you feel, watching it all?

He chose "sad".

Read that exchange back. We moved from an object, to another creature's inner state, to his own inner state — a real back-and-forth about an event that had happened an hour earlier, that no human being could possibly have pre-programmed a board for. Of everything that has happened in this work, I think about that conversation the most.

HOMEWORK, IN HIS OWN WORDS

Here's Matan doing homework with my wife using MaTalk AI. The app hears the question my wife asked, surfaces words that fit that question, and he answers — the same mechanism as the deer, applied to schoolwork. It's the ordinary version of the thing I'd spent years unable to give him.



YouTube Video: Matan completes a homework question using MaTalk AI.

<https://www.youtube.com/shorts/5CiArYESZwk>

SOLVING FOR THE ECOSYSTEM

Those experiences convinced me that a new type of AAC is needed — one that focuses on the conversation layer. So I started Verballi, and that prototype became MaTalk AI, an AI-powered AAC app. The name comes from Matan, because I wanted Matan to talk. (Matok also means "sweet" in Hebrew, which felt exactly right.)

The motto over everything we build: the most meaningful conversations are natural ones.

When I started Verballi, I set our mission as creating the best AAC experience — one that helps people have a natural conversation.

I say "experience" on purpose. A conversation is an experience, and we should think about AAC the same way. If using it is a bad experience, we stop using it — and then the conversation doesn't happen at all.

And to build the best conversational experience, you have to solve for the child's whole team. Not just the child's needs.

WHO ELSE "USES" THE AAC

This is the part of the problem I think our field under-discusses. The AAC user is the immediate stakeholder — but they are not the only person interacting with the AAC.

Parents and caregivers need better value from the device. Look honestly at the deal families are offered: invest hours in setup and maintenance, and in exchange, receive an "I want machine." That's a terrible trade, and people notice. When families abandon AAC — and abandonment rates in our field are painfully high — I don't believe they're giving up on their children. They're giving up on a deal that never made sense. Every device that stays in the backpack is a design failure. That's on us, the people who design these tools — not on the family.

SLPs need data. An AAC is also a data instrument: the thing that should generate evidence for the therapy plan, the progress

notes, the case at the IEP table. Instead, session time gets eaten by navigation. I once sat in an AAC training where a wonderful therapist demonstrated the built-in word search — type the word, see the path, three or four folders deep. And I remember thinking: my son can't spell. He won't be using that search capability any time soon. The path she was showing me was a path only the adults could walk.

Teachers are wearing two hats. Their job title is teacher, not part-time AAC operator. If a classroom teacher has to help hunt for a word, or clean up an over-long sentence one backspace at a time — with twenty-five other students in the room — we have quietly transferred our design failure onto them.

And the conversational partner gets bored. This is the one we forget, and it may matter most. If the partner gets bored because it takes so long to build a sentence, they will switch topics or walk away. And when the partner leaves the table, it no longer matters how good the sentence was. There's no one left to hear it. That is a conversation killer.

SOLVE FOR THE ECOSYSTEM NOT JUST THE USER

We need to solve for every one of those stakeholders — and at Verballi, that's exactly what we set out to do. Our goal is that everyone in that list finds their life more productive, more impactful, or simply fuller after using MaTalk AI.

The way we do it is by leveraging AI. Here are some examples:

- **For the child:** MaTalk AI understands the situation and offers the most relevant words to choose from — fast.
- **For parents and caregivers:** instead of hours spent configuring a device, AI helps organize it in minutes.
- **For SLPs:** a data dashboard, so therapy decisions rest on tangible data points.

In a new era of AAC driven by AI, the question stops being how to program better boards, and becomes something else entirely: how can we help the AAC better understand a situation? The answer is context.

AI — AND THE TWO OBJECTIONS YOU'RE RIGHT TO HAVE

I believe AI is the technology assistive tech has been waiting for. I want to earn that sentence rather than assert it — and I want to take the objections seriously, because they're the right objections.

WHY AI FITS THIS FIELD

First, why AI fits this field specifically. Assistive technology has always faced a brutal economic problem: every user's needs are genuinely unique. Unique doesn't scale. What doesn't scale struggles to attract investment. So innovation crawls — for everyone. That's not villainy; it's arithmetic.

AI breaks the arithmetic, because AI is, at its core, customization at scale. The same system, given context about different people, produces genuinely different results for each of them.

One product, many voices. That is precisely the shape of the problem our field has been stuck on for decades — and it's why I believe we're about to see more innovation in the next five years than in the previous twenty.

Now, the objections. And let's go back to Spider-Man for the line Uncle Ben gives Peter Parker: with great power comes great responsibility.

"I DON'T WANT AN AI SPEAKING FOR MY CHILD."

Neither do I. Remember where I'm standing: I'm a dad who built something for his son. I want to talk to my son. I have zero interest in talking to an AI that my son happens to be holding. A system that puts words in a child's mouth hasn't given them a voice — it's given them a ventriloquist.

This is why AI-powered AAC has to be designed so the AI acts as an assistant and the child always stays the driver. Think of it as driving a car: we're swapping a manual gearbox for an automatic. The driver hasn't changed. The learning curve and the experience of driving are dramatically better.

So here is the design line I refuse to cross, and the rule we hold at Verballi: AI narrows the field of choice. It never makes the choice. And the child can always go somewhere else.

Take Starbucks. When you take a young child to Starbucks, you don't hand them the full menu — most of it is irrelevant to them. You facilitate: muffin, banana, lemonade. Nobody calls that controlling. It's called being helpful. Offering relevant choices is not the same as choosing.

With that guardrail in mind, AI collapses composition from the better part of a minute to a handful of seconds. That's not a convenience feature. That's the difference between the partner walking away and the partner staying at the table. It's the difference between the Spider-Man insight arriving during the conversation — or after it.

"I DON'T WANT IT LISTENING ALL THE TIME."

It shouldn't. And it doesn't have to. Three principles matter here, and all three serve the same two pillars: trust and transparency.

- **Never record — just listen.** Understanding what's being said does not require keeping a copy of it.
- **Triggered listening, never ambient listening.** The system should listen only when the user tells it to — a button press, a wake phrase, or the act of beginning to compose — and never silently. Notice that this is exactly how human conversation already works: when you start talking to me, I know I'm being listened to. Listening should be an event with a beginning and an end, not a permanent condition.
- **Local processing wherever possible.** In MaTalk AI, transcription runs on the device. The board and images live on the device. Text-to-speech runs on the device.



MANAGING A TALENTED YOUNG ASSISTANT

My overall frame is this: AI is a brilliant, fast, wildly talented — and very young — assistant. You don't hand a new assistant your most sensitive work on day one. You also don't refuse to hire them because they might make a mistake. You scope the tasks, build the guardrails, review the output, and keep the responsibility yourself. The potential here is too large to walk away from. So we don't walk away. We manage.

And one ask that has nothing to do with software — something I'd love every reader to carry into their next session, classroom, and grocery-store line: you don't talk to the AAC. You talk to the child. Eyes on the kid, not on the screen. The device was never the conversation partner.

PART 4: LET'S BUILD SOMETHING TOGETHER

I want to end far away from my own product, on the thing I most want you to take from this article.

SPECIAL NEEDS ARE SPECIAL BY DEFINITION

Which brings me to Verbal's second motto: **special needs are special by definition — they demand unique solutions.**

For the entire history of this field, that was an economic curse: unique doesn't scale, so innovation starved. AI flips it. Uniqueness is no longer what makes a solution too expensive to exist.

The constraint is no longer technology. It's how many experts decide to pick it up.

Which is where you come in.

THE WALL JUST FELL

I am not a developer. I'm a product manager who became a world expert in exactly one subject: my son. That expertise — not code — is what made the first prototype work.

You have the same kind of expertise. You know things about your students, your clients, your own child that no engineer on the planet knows. For all of software history, that knowledge sat on the wrong side of a technical wall.

That wall just fell.

There's a term for what replaced it — "vibe coding" (a term coined by Andrej Karpathy): building real, working software by describing it in plain language. Zero to prototype in an afternoon, with no programming background. The bottleneck has moved from technical skill to domain knowledge, and you are rich in exactly the currency that now matters.

So this is where I ask you to give AI a try and build something yourself. And to make that easier, here's a practical guide to your first web app: an AAC keyboard that runs in a browser.

I chose a keyboard because it's something we've all used, it has a real user base in the AAC community, and the value is immediately obvious. The tools are free, and you should have something working in about half an hour.

I'm using Google AI Studio because it's free, runs entirely in a browser, and produces a real app you can use and share — Lovable(www.lovable.dev) and Base44(www.base44.com) work much the same way if you prefer them.

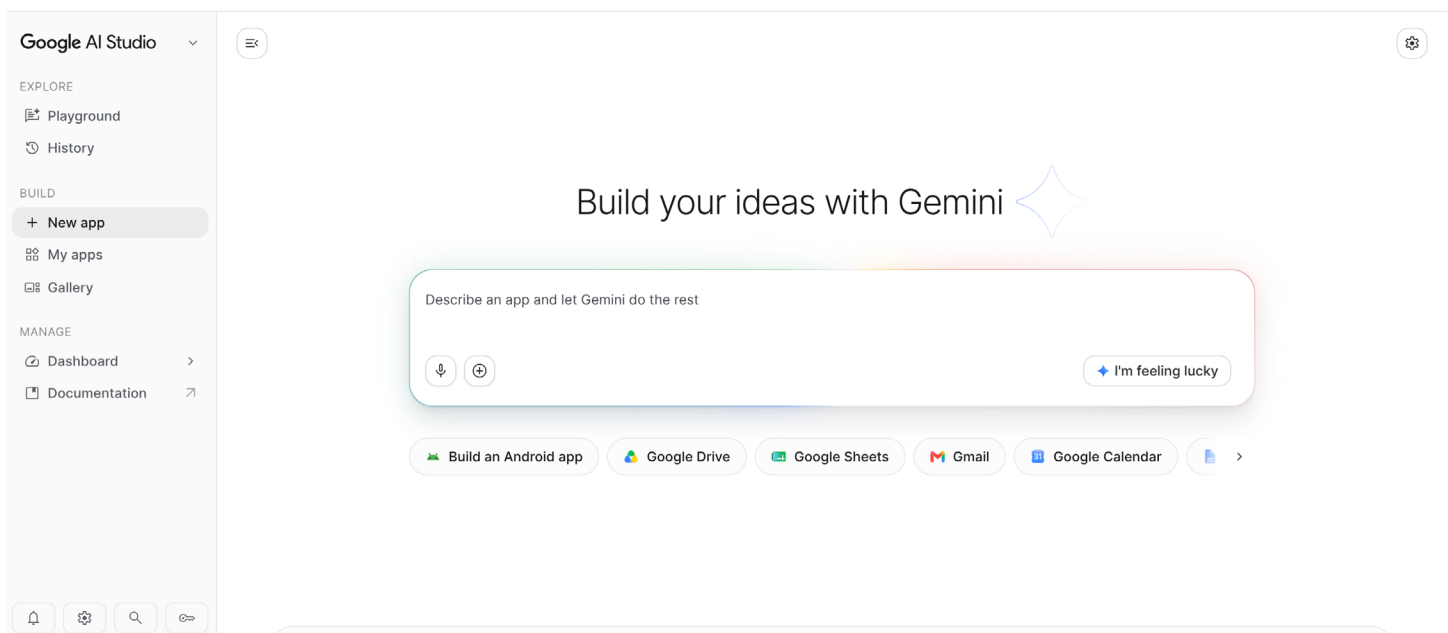


Image 1: Google AI Studio's Build mode. The prompt box is where the entire app starts.

THE WALKTHROUGH: BUILD AN AAC KEYBOARD IN 30 MINUTES

STEP 0: WHAT WE'RE BUILDING

A working AAC keyboard: a text bar, a row of predicted words, a letter keyboard, and a Speak button — built by describing it in plain English and letting an AI write the code.

Three words you'll need. A **prompt** is the description you type for the AI. **Text-to-speech (TTS)** is the voice that reads the sentence aloud. **Iteration** is asking for a change and getting a new version back — that's where the real work happens.

STEP 1: OPEN YOUR VIBE CODING SERVICE

Go to aistudio.google.com, sign in with a Google account, and select **New App**. You'll see a prompt box. No installation, no credit card. See Image 1.

STEP 2: DESCRIBE THE KEYBOARD IN PLAIN ENGLISH

Be specific. The more context you give, the less generic the result:

Build a responsive, letter-based AAC keyboard. It needs a text display bar at the top, a dynamic word-prediction row underneath it, a standard QWERTY letter layout, and a prominent "Speak" button that triggers text-to-speech. Design constraints: clean, minimalist UI with strict grid alignment and flat borders — no drop shadows or complex overlays. Use a high-contrast deep teal and cream color theme. Make sure all keys have large hit areas optimized for motor accessibility.

Press **Build**. In a few minutes you'll have a working app. Along the way it may ask what design style you want — optional, but in my experience it produces good ideas.

Pro tip: ask an AI (i.e. ChatGPT or Gemini) to help you write the prompt. Describe what you want and why, and let ChatGPT or Gemini draft it for you. See Image 2.

STEP 3: ITERATION MAKES PERFECT

This is where most people stop too early. The first version is a starting point, not a solution. We're here to bring value to a user, so keep iterating.

Two things stood out to me in my first build:

Contrast — the app was too bright. So I asked: add contrast options, using white and black, black and yellow, green and black, yellow and blue, and grayscale.

Text size — the letters were a fixed size. So I asked: give me the option to control the size of the letters.

Each request rebuilds the app in seconds. Notice what you're actually doing: you're not coding. You're specifying — which is the part you were always qualified for. See Image 3, next page.

STEP 4: PUT IT IN FRONT OF THE PERSON IT'S FOR

This is the step that makes everything real: take it to your audience for a test drive. They'll tell you what works, what doesn't, and which of your assumptions were wrong. Every piece of that is an opportunity to make the app better.

Use the **Publish** button at the top right to put the app on the internet. Google gives it a web address you can share with anyone — your code and chat history stay private. As easy as that.

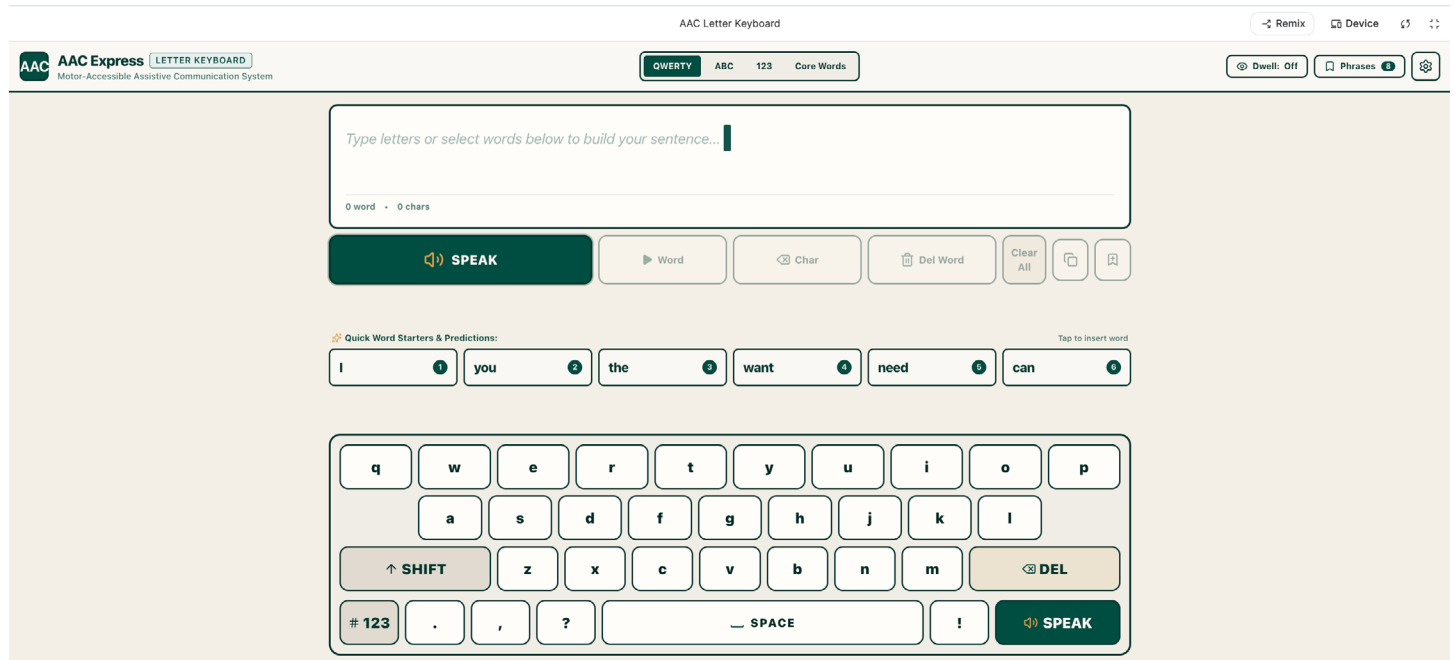


Image 2: The first working version, generated from the prompt above in under five minutes.



Image 3: the same app after two plain-English refinements. The two new dropdowns at the top right were added without writing a line of code.

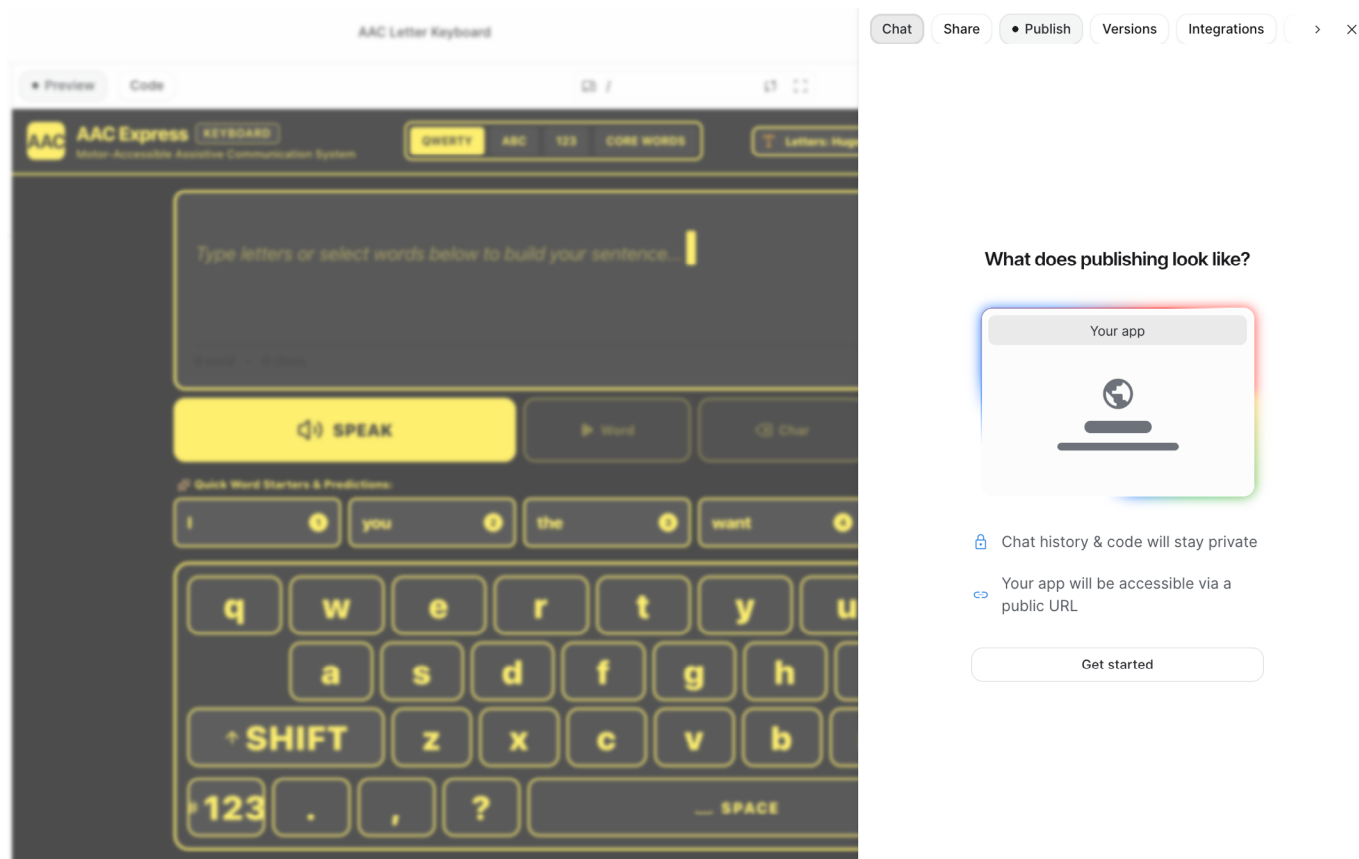


Image 4: The finished keyboard, and the Publish step that turns it into a link you can open on any device.

ONE LAST THING ABOUT THE RAIN

I want to leave you with something I haven't mentioned yet.

That science lesson at the start of this article — the one I asked you to imagine? I didn't invent it. I was sitting in Matan's science class, in the back row.

It was an open classroom day. The teacher was excellent: oceans, evaporation, clouds, the whole cycle. I watched my son track every word, and I'd put money on him following most of it. Nearly every child in that room had an AAC on the desk in front of them.

Then she asked her question. What do we need to make rain?
Not one device moved.

Not because those children didn't know the answer. Because nobody had predicted, weeks earlier while programming vocabulary, that this Tuesday would need the word evaporation.

That's the room I want you to keep in your head. Not because the technology failed — but because a room full of children had something to say, and the tools we gave them weren't built for the conversation they were in.

They know a lot. It's our job to help them show it.



Shay Cohen is the co-founder and CEO of Verballi (www.verballi.io), maker of the MaTalk AI AAC app, and the father of three — including a non-speaking eight-year-old rockstar who inspired all of it. ■

MaTalk AI

Verballi



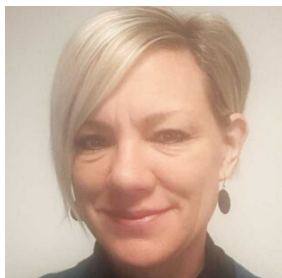
YouTube Video: Meet MaTalk App.

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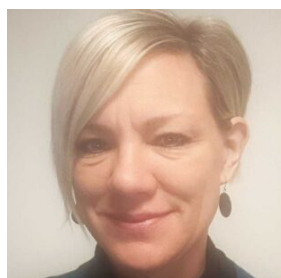
By Amanda Peters

In this session, participants will explore how to leverage Artificial Intelligence (AI) to streamline the IEP due process workflow. This webinar will demonstrate a variety of innovative tools, such as MagicSchool AI, BriskTeaching, and Lessi AI, which are specifically designed to reduce the administrative burden on special educators. Attendees will examine concrete examples of how these technologies can assist in drafting PLAAFPs, generating measurable goals, and summarizing evaluation data while maintaining legal defensibility and data privacy.

The session will follow a sequence of identification, practical application, and critical evaluation, providing a roadmap for integrating AI with humans in the loop. By utilizing these resources, participants will learn how to reclaim valuable time for direct student instruction.

As a result of this activity, participants will be able to:

- ✓ Identify three artificial intelligence tools that they can use to save themselves time when completing IEP paperwork.
- ✓ Evaluate which artificial intelligence tools would benefit them the most to complete due process paperwork..



AI to Advance Special Education Series: AI to Support AT Consideration and Training

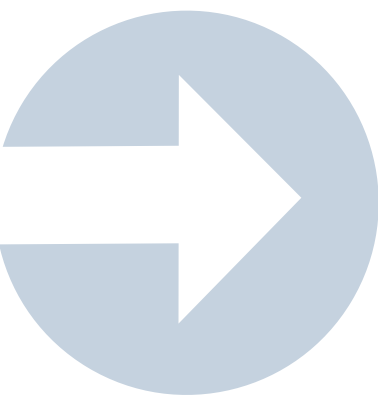
By Amanda Peters

Learn how to use AI to empower your special education teams to effectively consider AT and efficiently train them in use of the tools, all while ensuring humans remain the driving force behind decisions. The traditional SETT (Student, Environments, Tasks, and Tools) Framework remains the gold standard for AT consideration, using custom designed AI tools, like NotebookLM and Gemini Gems, can streamline the process and ensure teams are correctly identifying student needs and the tools that can help meet those needs.

These same AI tools can be customized to provide training and 24/7 AT coaching to staff implementing the tools. Attendees will be provided with NotebookLMs and Gemini Gems that they can further customize for their own use.

As a result of this activity, participants will be able to:

- ✓ Identify artificial intelligence tools that they can use to help themselves and other staff more efficiently and accurately consider assistive technology.
- ✓ Identify artificial intelligence tools that they can use to train others on the use of assistive technology products.



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The Prep Time Nobody Budgets For

Summary:

This article will examine the unpaid hours school professionals spend building visual supports by hand. It will trace the problem through patterns from hundreds of conversations with SLPs, special educators, and directors: fragmented tools, marketplace workarounds, materials that never reach families, and duplicated work across teams. Readers will learn why personalization drives the time cost, what multilingual caseloads now demand, and which questions to ask when evaluating any solution this year.

Ask a speech-language pathologist what time of day she made her last visual support. The answer is almost never during the school day.

It was after dinner. It was Sunday night. It was in the parking lot before a session, because a student's routine changed and the old board didn't fit anymore.

Over the past year, my co-founder and I have sat on hundreds of calls with SLPs, special education teachers, occupational therapists, AT specialists, and directors of special education. We open most of them with the same question: what are you doing right now to make your visuals?

The answers are remarkably consistent. Together they describe a problem the field has quietly accepted as the cost of doing the job. I want to lay it out plainly, because naming it is the first step to fixing it.

IT TAKES THREE PROGRAMS TO MAKE ONE THING

A teacher told us she had been making visuals the same way for twenty years. She wasn't complaining about any one program. She was describing what it takes to finish a single material.

Symbols from one place. Layout somewhere else. A photo pulled off the internet. A trip to a marketplace when none of it quite works.

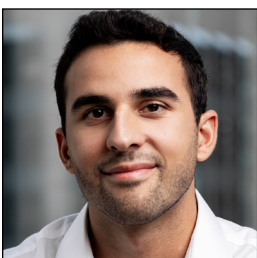
She used the phrase "countless hours," and she said it the way you say something you stopped counting a long time ago.

We hear a version of this on nearly every call. Two or three programs open at once, none of them talking to each other. Nobody chose this stack. It accumulated. One tool was purchased in 2011 and never sunset. Another came in with a new hire who liked it better. A third is free, which is why everyone uses it for the one thing it does.

Each tool does one part of the job well. The practitioner becomes the integration layer between them.

That integration work is invisible. It doesn't appear in a case-load number, a service log, or a workload study. There's no billing code for exporting a symbol set at the wrong resolution and starting over. It shows up in the evening, and it shows up in how tired people are in April.

Here's what makes it worse. The switching cost isn't just time, it's attention. Every jump between programs is a small reset. You lose your place, you lose the thread of what you were making and why, and you finish something slightly less thoughtful than what you set out to make. Not because you don't know better. Because it's 9:40 and you've been at this since dinner.



DYLAN MAKANI is the Co-founder and CEO of Ner Chat, creators of Glint—a fast, easy-to-use platform that helps educators and specialists produce high-quality visual supports in seconds. A Vanderbilt graduate in Neuroscience and in Medicine, Health & Society, Dylan began in neuroscience research and later worked in finance with a focus on healthcare investing. Inspired by a close friend's experience with assistive technology, he co-founded Ner Chat to deliver simple, scalable tools for educators and families.



WHY I CARE ABOUT THIS

I went to school at Vanderbilt University. While I was there, I joined a program called Best Buddies, and that's where I met one of the closest friends I've ever had. He uses a speech device.

Our friendship had a rhythm shaped by geography. I'd be in Nashville, then back in New York, then back again. Every time I left, we lost a little of the thread. Picking it back up was never as simple as sending a text.

That's what made me curious in a way I couldn't shake. I wanted to know more about his life. How he actually used his technology, day to day, and what it took for the adults around him to keep it working.

So I asked. And what I found inside his school was a group of people constantly making visuals by hand. For him, and for every other learner like him. Late, unpaid, and from scratch.

They were doing the right work the hard way. I wanted to make it easier.

THE MARKETPLACE IS NOT A SOLUTION, IT'S A SYMPTOM

Somewhere along the way, we normalized the idea that a teacher should pay another teacher, out of her own pocket, for a PDF.

Think about what that actually means. A public school professional, already underpaid, spending her own money on a static file made by a stranger for a student that stranger has never met. She buys it. She prints it. Then she realizes the schedule doesn't match her classroom, the symbols aren't the set her student knows, and the photos are of somebody else's cafeteria.

So she buys another one. Or she opens the file, discovers she can't edit it, and rebuilds it by hand anyway.

Those marketplaces exist because the tools failed. When the software is too slow or too clunky to make what you need, buying somebody else's approximation starts to look efficient. It isn't. It's a tax on people who are already subsidizing their own classrooms.

I don't blame anyone who shops there. I blame an industry that made it necessary.

PERSONALIZATION IS WHERE THE HOURS ACTUALLY GO

Here is the part that gets missed when people talk about prep time as a workflow problem.

A generic story about "going to the dentist" does not work for a student who needs to see his dentist, his waiting room, that specific chair. A first/then board with a stock symbol for "cafeteria" is less useful than one with a photo of the actual cafeteria he walks into at 11:40.

Practitioners know this. It is why they spend the hours. The personalization is not something they tack on when there's time. It is the intervention.

We've watched this play out in the most literal way possible. A

student refuses a transition. The team builds a beautiful, correct, generic visual. Nothing changes. Someone finally takes a photo of the actual hallway, drops it in, and the behavior resolves in two days. Not because the visual was prettier. Because the student could finally tell what it was referring to.

That is the whole ballgame, and it is exactly the part no template library can hand you off the shelf. Which is why the work keeps landing back on one person at a kitchen table.

So the real problem isn't that making visuals takes too long. It's that the specific thing that makes a visual effective is the specific thing that makes it slow.

Any solution that speeds up the generic part and leaves the specific part untouched has solved the wrong problem.



YouTube Video: A real life homework session with MaTalk AAC App.
<https://www.youtube.com/shorts/5CiArYESZwk>

THE MATERIAL DIES AT THE CLASSROOM DOOR

An early intervention team told us something that stuck with me. They could build a beautiful visual schedule for a three-year-old, use it in session, and then send the family home with nothing.

The parent wants to reinforce it. The paraprofessional on the bus could use it. The grandmother watching him Thursday afternoons has no idea what the schedule looks like.

Generalization is the entire goal, and the material is trapped in the building where it was made.

For a long time, the answer to that was printing. Print it, laminate it, velcro it, send it home. And printing does help. But we should be honest that it was never really the answer, it was the only delivery method available.

Printed supports arrive as loose pieces. They get left in a backpack, dropped in a car, or separated from the board they belong to. The strip comes home without the icons. The icons come home without the strip. A week later, half of it is gone and nobody wants to ask the teacher for another copy.

Worse, printed materials arrive without instructions. A parent opens the folder and sees a laminated card with six pictures on it.

What is she supposed to do with it? When does she use it? What does she say? Is she supposed to hand it to him, point at it, or wait? Nobody had time to explain, and the material can't explain itself.

So we needed a better way to get these resources to the people who actually needed them. Not just a different file format. A delivery method where the material shows up intact, on a phone the parent already has, without an account or a login or a subscription. Where the words can be heard, not just read, so a parent knows how it's supposed to sound. And where it's intuitive enough that a grandmother, a bus driver, a substitute, or a brand new paraprofessional can pick it up and use it correctly with minimal support.

That last part matters more than it sounds. A support that requires training to use will only ever be used by the people who got the training. A support that explains itself travels.

EVERYONE REBUILDS THE SAME BOARD

In a mid-sized district, five different people will make a first/then board this month. They will make five slightly different ones. None of them will know the others exist.

Then a teacher retires or changes buildings, and her materials leave with her. Sometimes they leave on a personal laptop. Sometimes they leave inside a program licensed to an email address that just got deactivated. Sometimes they leave in a binder that ends up in a closet, and three years later someone finds it and can't tell which student it was for.

The next person starts from zero.

One director of special education told us her goal was simple. One place where her SPED teachers, SLPs, and OT and PT staff all pull from the same shelf. Not for elegance. Because she was tired of paying, in staff hours, for the same board over and over.

There's a second cost here that districts feel and rarely name. Without a shared library, there's no consistency for the student. A learner might see three different symbol conventions for the same concept across speech, OT, and the classroom, because three different adults built three different materials in three different programs. We ask students with communication differences to be flexible across all of it, and then we're surprised when carryover is hard.

Standardization has a bad reputation because it usually means everyone gets the same generic thing. That's not what this is. This is everyone starting from the same shelf and personalizing from there.

MATERIALS YOU CAN'T TAKE WITH YOU

A related problem, and one that comes up more than I expected.

Teams have described spending months building something substantial. A thirty-page communication book. A full year of classroom routines. Then their district changes vendors, or the program sunsets, or the license doesn't renew, and all of it is

stranded in a proprietary format that won't open anywhere else.

Sometimes they rebuild it. More often they photograph the pages, or print what they can before the license expires, and quietly accept the loss.

Ask any vendor, including me, what happens to your materials if you leave. If the answer is vague, that's your answer.

THE MULTILINGUAL GAP IS NOW A DAILY PROBLEM

A few years ago, multilingual visual supports were a special request. Now they're a baseline expectation, and the materials have not caught up.

We talk with districts serving families in Spanish, Arabic, Mandarin, Portuguese, and Haitian Creole, sometimes all in one building. The current workaround is a practitioner hand-translating text into a program that was never built for it, guessing at whether the phrasing is right, and having no way to give the family voice output in their own language.

Two things go wrong with that workaround.

First, the translation is often literal when it needs to be functional. A phrase that's correct on paper can land oddly in the home, and the practitioner has no way to know.

Second, and bigger, the parent gets text. Text assumes the parent reads that language fluently, which is not always true, and it gives them nothing to model out loud. A visual support that a parent can hear in their own language is a fundamentally different object than one they have to sound out.

This is not an edge case anymore. In a lot of buildings it's the majority of the caseload, and it's growing faster than any district's ability to hire bilingual staff.

AND WHEN SOMETHING DOES GET BOUGHT, IT SITS

Here's the objection I respect most, because it's usually right.

A district business official told our team he was hesitant to approve new software. Not because of cost. Because the last few things they bought went unused. He had watched licenses expire on platforms nobody logged into after the first week.

That fear is earned, and it's the reason a lot of good tools never make it past a pilot. Adoption isn't a marketing problem. It's a design problem. If a tool takes forty minutes to learn, and the person learning it has twelve minutes between sessions, it will not get learned. It will get bookmarked, and bookmarks are where software goes to die.

The tell is always the first week. If a practitioner can't produce something genuinely useful on day one, without a training session, the tool is already in trouble. Not because people are unwilling. Because the school year does not pause for onboarding.

WHAT ACTUALLY SOLVES THIS

I run a company in this space, so weigh this accordingly. But if you're evaluating anything this year, ours or anyone else's, these are the questions I'd ask.

- Can a busy person make something in under a minute?



Not "is it powerful." Is it fast enough to use between sessions, on the day the routine changed. Speed is the difference between a tool that gets used and a license that expires.

- **How much friction sits around personalization?** Be skeptical of anyone who tells you this part is free. You are going to upload photos. No software knows what your student's cafeteria looks like, and any company claiming otherwise is selling you a stock symbol with better marketing. The honest question is what happens after the upload. Does the photo drop straight into the material, or does it start a second workflow with a resize, an export, and a reimport? That gap is where the evening hours live.
- **Can families open it for free?** Ask directly whether a parent needs an account or a subscription to see what you send home. If they do, generalization stops at the door.
- **Can someone untrained use it correctly?** Hand a material to a paraprofessional or a parent and watch. If they need you to explain it, it will only work when you're standing

there.

- **Is there one shared library?** Materials should belong to the district, not to an individual's laptop. Ask what happens when a staff member leaves.
- **Does it speak the languages your families speak?** With real voice output, not just translated text.
- **Are licenses transferable, and is training included?** Those two answers predict adoption better than any feature list.
- **Who is on the other end when something breaks?** This is the one I'd weight highest, and it's the one nobody puts on an evaluation rubric. Ask who answers when you email. Ask how long it takes. Ask whether that person has ever sat in a classroom, run a caseload, or watched an IEP meeting go sideways.

There's a real difference between a company that sells into this space and a company that thinks about this space on the

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YouTube Video – Getting Started with Glint
<https://www.youtube.com/watch?v=Z-P15CuTfYE>

weekend. You can hear it in about four minutes on a call. The first one demos features. The second one starts describing your problem back to you, in more detail than you gave, because they've heard it eighty times and it keeps them up at night.

Pick the second one. Software gets copied fast. Obsession doesn't.

WHAT WE BUILT, AND WHY IT LOOKS LIKE THIS

We built Glint against exactly these criteria, because they came out of exactly these conversations.

Practitioners describe what they need in plain language and get a personalized social narrative, schedule, communication board, or task analysis in seconds. Real photos go straight into the material. Everything translates into 50 or more languages with voice output. Families open materials from a QR code or a link, free, with no account required. Teams share one organizational library so nobody rebuilds the same board twice, and the library belongs to the district rather than to whoever happened to make it.

None of those are clever ideas we had. Each one is a complaint somebody said out loud on a call, usually more than once.

Today Glint is used in more than 500 school districts, including the New York City Department of Education. The thing that surprised us most is who uses it. We built it expecting SLPs and special educators. What actually happened is that general education teachers, paraprofessionals, behavior staff, front office staff, and administrators started making materials too, because the need for a clear visual was never confined to the speech room.

Video link: <https://www.youtube.com/watch?v=Z-P15CuTfYE>

THE PART I CAN'T FIX

None of this makes the job easy. The caseloads are still too big and the paperwork is still relentless. But the hours spent making visuals by hand were never the part of the job anyone trained for, and they're the easiest hours to give back.

If you're coming to Closing The Gap in Minneapolis this October, come find us. I'd rather hear what's still broken than tell you what we built. ■

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CONNECTIONS

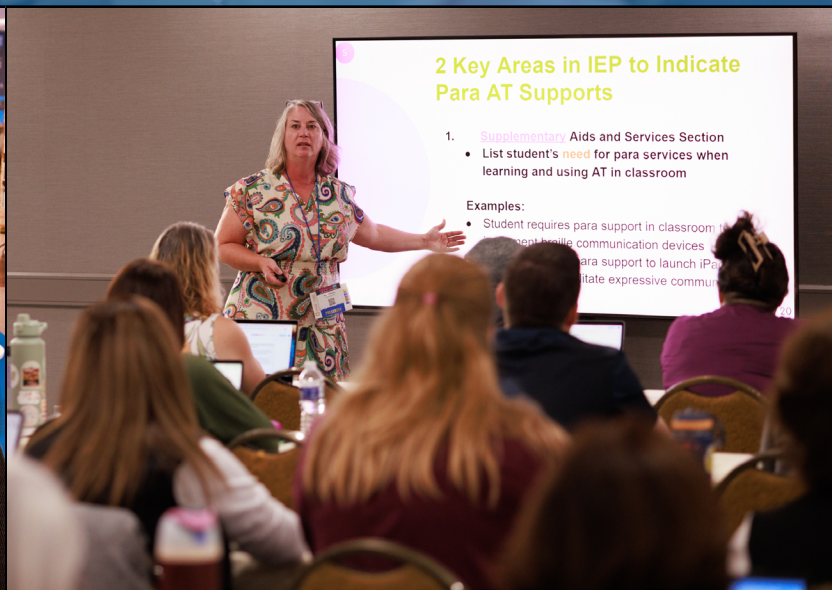
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2 Key Areas in IEP to Indicate Para AT Supports

1. **Supplementary Aids and Services Section**
 - List student's **need** for para services when learning and using AT in classroom

Examples:

- Student requires para support in classroom to use augmentative communication devices
- Student requires para support to launch iPad application to facilitate expressive communication

Before You Click Generate:

Teaching Special Educators to Use AI Well, Not Just Fast

A look at PAUSE and PBNJ, two practical frameworks helping special education teachers close the gap between AI adoption and AI training

Summary:

This article will introduce readers to two practical frameworks for special education teachers navigating AI: PAUSE, a five-step ethical check covering privacy, accuracy, bias, independence, and equity, and PBNJ, a research-grounded prompting method for generating classroom-ready, differentiated materials. It will explain how these frameworks connect to FERPA, IDEA, and UDL 3.0, extend the same privacy caution to families, and offer teachers and parents concrete, low-lift starting points for using AI responsibly with students who have disabilities.

Across the country, special education teachers are already using artificial intelligence to draft progress notes, adapt reading passages, and brainstorm behavior supports. National surveys put regular AI use among special education teachers above half, yet fewer than a quarter of those same teachers report receiving any formal training on the risks. That gap, between how fast teachers have adopted AI and how little guidance they have been given for using it responsibly, is the starting point for a growing body of professional development work centered on two practical, classroom-ready frameworks: PAUSE, a five-question ethical check for any AI tool used with or for a student, and PBNJ, a four-part prompting structure grounded in peer-reviewed research that turns a vague AI request into classroom-ready material.

The frameworks, developed by Dr. Tiffanie Zaugg, a professional development lead at Central Rivers Area Education Agency in Iowa and a former state assistive technology lead, treat AI use as a professional skill that has to be taught deliberately, the same way teachers are taught to write a behavior intervention plan or interpret an evaluation report.

(See YouTube video next page)

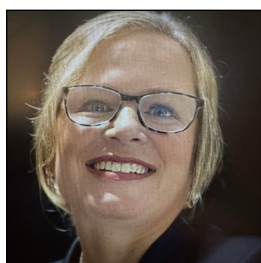
THE REALITY TEACHERS ARE ALREADY LIVING IN

The case for structured training starts with a blunt set of numbers. Data drawn from Center for Democracy and Technology research published in October 2025 found that 57 percent of special education teachers had already used an AI tool on an IEP or 504 plan task in the 2024 to 2025 school year, while only 22 percent had received any training on the risks involved. No federal laws currently address AI use in special education, leaving individual teachers to make high-stakes decisions with few guardrails.

Naming that gap is not meant to frighten teachers away from AI. It is meant to make the case for informed use rather than either blanket avoidance or unexamined trust. The underlying message of most current AI ethics training for educators is not that teachers should stop using AI, but that they should use it with their eyes open.

WHAT HAPPENS THE MOMENT YOU HIT GENERATE

A scenario many teachers recognize immediately illustrates the risk clearly. A teacher, hoping to save time, pastes a real stu-



DR. TIFFANIE ZAUGG is the assistive technology and artificial intelligence specialist at Central Rivers Area Education Agency in Iowa, a former Iowa state Area Education Agency assistive technology lead, and principal investigator of Project RAISE, a federally funded robotics and AI intervention for students in special education. She is a co-author of the cited 2025 study on AI-assisted lesson planning (Faith, Zaugg, Stoly, Szabo, Haghi, Baldis, & Olmedo, published in the journal AI).



YouTube Video: AI in Classrooms A 12-Page Guide for Educators. https://www.youtube.com/watch?v=_xtf8ShkKII

dent's first name, disability category, and specific performance data into a consumer chatbot to draft progress-monitoring language. Within seconds, the identity of a child with a disability, along with sensitive academic data, has left the classroom and entered a system that may store it, use it to train future models, or expose it to a data breach or legal subpoena.

The scenario illustrates a point that is easy to miss in the rush of a busy school day: under the Family Educational Rights and Privacy Act, personally identifiable information is not limited to a student's name. Any combination of details, such as a disability label paired with a grade level, a school name, and specific performance data, can be enough to identify a student even without a name attached. Many consumer AI tools' terms of service explicitly allow user input to be used for model training, and few include the kind of data-processing agreement that a school district's use of student information requires.

The safeguard is straightforward: treat every AI prompt like a public billboard. If a detail would not be comfortable posted in a school hallway, it should not be pasted into an AI tool. In practice, that means stripping out names, school names, and family circumstances, and replacing disability labels with functional descriptions. A prompt asking for help with a behavior interven-

tion plan for a named student with a specific diagnosis and a difficult family situation becomes a request for a plan addressing physical aggression during academic tasks, with no identifying details attached. Teachers who make this shift consistently find the output just as useful without exposing a real child's identity.

THE PRIVACY MESSAGE BELONGS TO FAMILIES TOO

The de-identification habit is usually framed as guidance for teachers, but the same risk exists on the other side of the IEP table. Parents and guardians increasingly turn to consumer AI tools for their own help, drafting a letter to a school team, trying to understand evaluation language, or researching a diagnosis, and in doing so, many paste in the same kind of identifying details schools are working to keep out of AI prompts: a child's name, school, disability label, and specific performance or behavior data. That information is just as exposed when a parent enters it as when a teacher does.

Districts already send home guidance on topics like internet safety and social media use. Plain-language guidance on AI is becoming an equally basic literacy need, and it fits naturally into channels schools already use: a line in the family handbook, a handout at an IEP meeting, or a brief mention during a family

AI literacy night. The core message translates easily for a home audience: before typing anything about a child into a public AI tool, leave out the name, the school, and the specific diagnosis, and describe the situation in general terms instead. Families do not need to become privacy experts to protect their own children. They need the same billboard test teachers are learning, phrased for a kitchen table instead of a classroom.

WHERE BIAS HIDES IN THE MACHINE

A second pressure point in AI ethics training surprises more teachers: bias. Artificial intelligence systems learn patterns from historical data, and the historical record in American education includes decades of documented inequity, including the disproportionate placement of Black and Latino students in restrictive settings. When an AI tool recommends a placement, drafts a goal, or interprets an assessment, it can inherit and repeat those patterns instead of correcting them. Three concrete ways this shows up in practice include placement recommendations that skew more restrictive for student profiles mentioning behavioral challenges, IEP goals that reflect lower expectations for students with certain disability labels, and screening algorithms that generate more false positives for particular demographic groups.

Representation gaps compound the problem. AI models tend to know less about low-incidence disabilities, culturally diverse learners, and multilingual students with disabilities, simply because there is less training data describing their experiences well. And left unchecked, AI-generated descriptions of disability tend to default to deficit-based language rather than the strengths-based, person-first framing the field has worked for decades to normalize.

The response to that risk is not to abandon AI over bias concerns but to interrogate any new tool before it reaches a classroom. Five questions are worth asking before adopting any AI tool: what data was it trained on, who was involved in building it, does it perform equally well across different student profiles, does its output use strengths-based language, and can a teacher override or edit its recommendations? That last question carries particular weight. If a teacher cannot modify or correct an AI tool's output, the tool is effectively making decisions for the teacher rather than with the teacher, which is a very different and much riskier relationship.

THE PAUSE FRAMEWORK

Every thread from the ethics discussion- privacy, accuracy, bias, independence, and equity- converges into a single tool teachers can carry with them: PAUSE. The framework is designed to be printed, kept next to a computer, and run through in full before using any AI tool with or for a student.

(See Table 1: PAUSE Framework)

Letter	The Question to Ask Before Clicking Generate
P - Privacy	Is any student identifiable in this prompt? Has all data been de-identified?
A - Accuracy	Can the output be verified? Is professional judgment still driving the decision?
U - Underlying Bias	Could this output reflect or amplify bias against any group of students?
S - Independence	Does the tool build a skill, or replace it? Is it a scaffold or a crutch?
E - Equity	Does every student benefit equally? Who might be left out or harmed?

Table 1: PAUSE Framework

The Independence letter draws a distinction central to the framework: the difference between a scaffold and a crutch. An AI tool that reads text aloud for a student with dyslexia is a scaffold, temporary support that keeps a skill accessible while it develops. An AI tool that generates all of a student's written responses when that student is capable of typing is a crutch, something that replaces a skill rather than building toward it. The same distinction applies to organizing a graphic organizer for a student to fill in, which supports independence, versus letting AI write IEP goals without a teacher's clinical judgment behind them, which erodes it. For each AI use with a given student, the practical question is whether the tool builds a bridge toward independence or a wall around it.

AI INSIDE THE UDL FRAMEWORK

Alongside the ethical framework, special education increasingly discusses AI use through the lens of Universal Design for Learning. UDL's most recent version, UDL 3.0, organizes instruction around three principles: engagement, or the why of learning; representation, or the what of learning; and action and expression, or the how of learning. Specific AI uses map onto each principle. On the engagement side, AI can generate interest-based word problems, culturally responsive scenarios, and student choice menus. On the representation side, it can produce text-to-speech output, image descriptions, reading-level adjustments, and language translations. On the action and expression side, it can support speech-to-text, writing scaffolds, multimodal output options, and organizational supports such as visual schedules.

A related question carries legal weight: can generative AI be written into a student's Individualized Education Program as assistive technology? The answer is yes, when the tool functions as AT for that particular student. The federal definition of assistive technology under the Individuals with Disabilities Education Act is broad enough to encompass many AI tools, provided the tool addresses a documented need, the student uses it consistently, it is named in the IEP's assistive technology section, and staff is



trained to support it. That framing sets up a live legal question many districts have not yet resolved: when a student uses an AI tool as a documented accommodation, a classroom-wide ban on AI use can create real tension with that student's rights under Section 504 and the ADA. Districts need a clear answer before a dispute forces one.

FROM ETHICS TO EXECUTION: THE PBNJ FRAMEWORK

Ethical grounding answers whether and when to use AI. It does not answer the separate question of how to get an AI tool to produce something actually useful for a specific student. That second question is the subject of research Zaugg co-authored with a team of educator-researchers at the University of Toronto. The study, published in 2025 in the journal AI and led by Faith, Zaugg, Stoly, Szabo, Haghi, Baldi, and Olmedo, spent fourteen weeks examining how pre-service teachers used AI for differentiated lesson planning. Its central finding runs against the intuition many teachers bring to AI: writing one long, highly detailed prompt and expecting a finished, usable lesson back does not work well. Even thorough single prompts tended to produce material teachers described as impersonal and, in the researchers' words, alien. What worked instead was iterative back-and-forth dialogue with the AI tool, an approach the researchers describe as jamming, in which a teacher builds a result gradually, adds detail in stages, and keeps critical judgment engaged throughout the exchange rather than accepting a first draft wholesale. The study also found that prompting AI to act as a critical friend, explicitly asking it to challenge assumptions and surface blind spots, helped teachers notice gaps in their own planning, particularly for students with diverse needs. Underlying it all was a finding the research team returns to repeatedly: teachers perform a kind of contextual alchemy, drawing on knowledge of an individual child, the physical classroom, timing, and relationships that no AI system can replicate.

That research carries its own name: PBNJ, short for Persona, Break Glass, Name Plan, Jam. Rather than a separate teaching shorthand layered on top of the study, PBNJ is the four-step workflow the research itself produced, and any teacher can apply it in under two minutes.

(See Table 2: PBNJ Framework)

The framework makes a clear difference. A vague prompt asking simply for a reading worksheet about animals produces generic, grade-level material a teacher then spends twenty minutes editing to fit actual student needs. A PBNJ-structured prompt that assigns the AI a persona, opens with the basic ask, names a clear plan for a 150-word passage about ocean animals at a second-grade reading level with a defined Lexile score, three comprehension questions of specified types, and a five-word vocabulary list, and then jams with the AI to refine the result, produces a passage a teacher can print and use imme-

Letter	What It Prompts the Teacher to Do
P - Persona	Assign the AI a specific role suited to the task, such as an experienced special education teacher creating differentiated materials.
B - Break Glass	Start with the simple, direct version of the request, the basic ask before any refinement.
N - Name Plan	Name the plan for the output: what it should cover, what format it should take, and what the student's specific needs are.
J - Jam	Iterate through back-and-forth dialogue, treating the AI as a critical friend and refining the result gradually rather than accepting the first draft.

Table 2: PBNJ Framework
The PBNJ prompting framework, from Faith, Zaugg, Stoly, Szabo, Haghi, Baldi, & Olmedo (2025), AI, 6(12), 310.

diately. The AI system is not smarter in the second example. The prompt is.

MATCHING TOOLS TO STUDENT NEED

Zaugg maintains a continuously updated, publicly available spreadsheet cataloging AI tools by student need, organized into more than twenty tabs and rated for privacy and compliance, using a color code of green for compliant, yellow for use with caution, and red for tools that do not meet standards. The resource reflects her broader teaching philosophy: organize tools around what a student needs rather than which AI product is trending.

The available tools fall into four practical categories. For reading and text access, tools such as Diffit can instantly adapt a pasted article or text into multiple reading levels with vocabulary support, while general-purpose tools like ChatGPT or Claude can generate leveled passages from scratch when given a specific Lexile level, grade, and topic. Education-specific platforms such as MagicSchool AI include special-education-specific generators for goals and accommodations, and interactive tools such as Curipod build in differentiation for inclusive, whole-class lessons. For writing, IEP planning, and executive function support, general-purpose AI tools handle sentence starters, graphic organizers, and rubric adaptation, while a free tool called Goblin Tools, built by a neurodivergent developer, breaks a complex assignment into step-by-step chunks and has become a particular favorite among teachers for its intuitive grasp of executive function challenges.

Teachers generally do not need a different specialized tool for every task. A general-purpose AI assistant paired with the PBNJ framework can handle roughly 80 percent of what a special education teacher needs day to day. The specialized, purpose-built tools are useful additions for specific recurring workflows, not a replacement for learning to prompt well.



FIVE-MINUTE MONDAY WINS

Structured AI training for teachers tends to close the same way: with an insistence on one small, immediate action rather than an overwhelming overhaul of practice. Five-minute starting points include running tomorrow's reading passage through a leveling tool to create versions matched to each student's reading level, pasting a complex assignment into Goblin Tools for an instant step-by-step breakdown, asking an AI tool to generate a visual schedule or social story for a student who needs one that week, creating an accommodated version of an upcoming quiz, and using a PBNJ-structured prompt to draft a progress monitoring template tied to a specific IEP goal.

Saying a chosen commitment out loud to a colleague before leaving the room is a small step backed by research showing that spoken commitments are roughly twice as likely to be followed through on as silent intentions. The goal is not mastery in a single session. It is one small win on a Monday that builds enough momentum to try a second thing, and then a third, over the course of a school year.

THE BIGGER PICTURE

Taken together, the ethics framework and the prompting framework sketch out a coherent answer to the adoption-training gap described at the start of this article. Teachers do not need to be talked out of using AI, and they do not need to be handed a tool with no instructions and left to sort out the risks themselves. What the research and the classroom experience both point to is the same kind of structured professional preparation the field already provides for any other high-stakes instructional decision: a clear ethical framework, an understanding of the relevant legal landscape, and a concrete method for getting useful results without cutting corners on student privacy, accuracy, bias, independence, or equity.

AI does not replace the contextual alchemy that makes a teacher irreplaceable, the knowledge of an individual child, a classroom, and a relationship that no algorithm can access. Used well, and used within a clear framework, it gives a teacher a little more time and a few more tools to practice that judgment, not less reason to exercise it. ■

Starting the New Academic Year with Best Practices for Accessibility and Inclusivity

Summary:

Planning for a successful academic year has changed over the decades. Gone are the times when preparation was making sure you had items hung on the wall, classroom desks in a row, chalkboards cleaned, and your lesson plan book completed. We are going to look at those aspects of the classroom which matter like flow, seating, stations, recommended devices, and mental health supports. We are striving to create a holistic learning environment for our students.

We have come a long way in knowing how to create Accessible and Inclusive classrooms. I remember 40 years ago setting up my classroom and thinking that it was going to meet the needs of all my students. I was teaching high school Latin at the time and so I decorated my walls with posters of famous Roman architecture like the Colosseum and Circus Maximus. I also had pennants from the high school and my undergraduate alma mater, the University of Dallas along with a shirt commemorating UD's initial claim to fame – an 87-game losing streak in men's basketball. Other than that, the room had its desks all in rows and a cabinet in the front by my teacher's desk. It was quite Spartan (I know that is Greek and not Roman), but that was how high school classrooms were supposed to be, functional with the focus on what was written on the chalk board. There was no technology in that room. As a matter of fact, the only pieces of technology that ever would be brought into the room were a stand with a TV and a Betamax player, a record player (some of you in a younger generation may need to Google that one!), and a filmstrip projector.

Please do not use my thoughts from 40 years ago when you prepare your classrooms here in 2026! The first thing you may wish to consider is the "flow" of the room. Are you going to be using tables rather than desks? If you are using desks, how are

they going to be arranged. Research suggests that by putting student desks in a pod, it allows you to shift the arrangement of the desks based on the activity and the needs of all the students (Ibiloye, 2021). Understanding the students' individual needs as well as the tasks being asked of them helps to decide daily which arrangement may be best (Tobia, et al, 2020). Tables are good for creative activities or group work as well as fitting perfectly into the way we present information to our individuals. However, they may not work as well for students who are easily distracted. Try a combination approach to the seating and desk arrangement which permits students to handle their work in a location that supports them. Don't forget to have some alternative forms of seating that the students can select for activities as well! Having an exercise ball chair, a wobble chair, cushions, pillows, bean bag chairs, and even lawn chairs can give students a break from the sensation of a standard plastic or wooden chair allowing them to focus on their work rather than how uncomfortable they are.

Flow also refers to the ability to allow movement in the room. Is there enough space in your room to have the students move around and easily get to various stations you may have set up? Do you have room for any wheelchair users or students who may be using walkers to get around? Studies on the influence of move-



DR. RAYMOND T. HEIPP, is a 40 year veteran of administration teaching, and classroom consultation for general education and special needs students. He has designed many support programs for various schools, Head Start/Early Childhood Programs, Mental Health programs, and facilities. His expertise in assistive technology, sensory items, and creating holistic spaces has enabled him to design updated approaches when working with students of all abilities as well as adults. He currently works with schools and other institutions in classroom, sensory room, and specialized room design as well as consulting on how to best support all individuals in workspaces and which assistive technology and sensory items might be most appropriate in various situations and approaches to working with all individuals in various capacities. He has been called upon in the last few years to assist in the application of mental health support within these environments as well.

ment on learning also suggest that having enough space where students can take movement breaks. Moderate movement, even something as simple as standing during a lesson, can increase focus and cognitive ability (Mehta, et al, 2016). This does not mean that every child needs a standing desk though. Remember that the critical piece of learning is putting each individual in a position where their abilities can function at a high level. So, do we need to invest in standing desks? One of our colleagues from CAST, Michelle Soriano, put forth a brilliant suggestion a while back where she went down to the local thrift shop and bought an ironing board. She brought it to a classroom and put a thick piece of posterboard on top of it. She then could let students use it when they wanted a “standing desk” as well as when they wanted a “floor desk” as the ironing board could easily shift its height. It could then be folded up and stored when not in use.

What about the walls? Remember that some of our individuals may have attention issues. Don't create something overwhelming by having the room covered. Be purposeful in both areas for things like homework, calendars, reminder/learning charts (like letters and numbers), and celebration of their work. Reminder posters for things like washing hands, putting away materials, and positive classroom interactions are great as long as their placement makes sense. Putting a poster reminding them to wash their hands by the windows doesn't make sense and can actually encourage them to look outside and lose attention. Be careful not to have too many colors and pictures as that can become overwhelming and create unwanted stimulation. Have fun with your room and decorate it to make it an inviting and positive learning environment. Just be careful not to overdo it and make it look like a party room. Having organizational tools like folders on a wall, calendars, and cubes for the students to keep their materials make sense and teach life skills along the way.

Find a space in your room where you can have a “decompression area.” Put down some carpeting, bring in a Sensory Blackout Tent, or have some pillows and a beanbag chair separated from the rest of the room by a cabinet or even a shower curtain where students can go to calm themselves or take a brain break. Establish rules around how that can be used, when it can be used, and how to take turns in order to have it function most effectively. Don't be afraid to use it yourself during lunch or right before the students arrive so you have your stress breaks as well!

If you can use modular seating or desk pods, consider how you might set those up into stations for different activities as well. I have had some teachers and administrators concerned that the students might have to move those desks or seats and I understand. Know though; by moving their own desks in a supervised format, they are actually getting some heavy work which can then add to their focus and attention as the next activity begins. Don't make it too complicated and turn it into a game where everyone wins. Moving desks or chairs into new arrangements is another way of putting items where they belong based on the needs. This translates into daily activities like pushing their chairs

in, separating clean and dirty clothes, putting food and milk away, and cleaning up after using the bathroom.

One of my favorite stories with seating comes from an elementary school in the Southeast. They have tables already set up with an aisle for greater accessibility. The chairs themselves are set against a wall. When the students come in each morning, those who will be sitting down since they are not in a wheelchair have a choice of which type of chair they need for that day. There is an assortment of chairs which include wobble chairs, exercise balls and exercise ball chairs, stools, and standard plastic chairs. I was amazed to see how the students loved this idea and moved the chair they chose over (doing some moderate heavy work in the process) to the table. What really stood out to me was how some of them also changed their chairs when the activities changed. I had one student tell me that she liked the wobble chairs when she was reading because it “let her be in the book.” They also learned life skills around sharing as there were limited numbers of each of the special chairs. They seemed to really connect with each other at another level when it came to sharing the types of chairs they were using. It also allowed that classroom to have limited numbers of chairs of each type so as not to create a budget crunch. Although they had a couple of beanbag chairs, those were not used during instructional time. Instead, they were placed in their “chill” area which was used as a sensory space when breaks were needed.

Take a look at the assistive technology you may have in a cabinet or on a shelf which is no longer being used. If you have something like a set of [AbleNet Talking Brix 2](#) or other smaller single message communicators, put them at the stations or in other areas where the students may need some direction. A set of three Talking Brix allows you to be in four places at the same time giving guidance and advice. Take a [Attainment Company GoTalk](#) or [Ablenet QuickTalker](#) and turn them into “Read-along Books.” Have a physical copy of the book and record yourself reading each page on a different button on the device. The students can then have something that they can use when “reading” to themselves. Utilize devices like reader pens as well so that students who are able to use them can read other materials or use their translation capabilities to help understand information in a language they understand. Do not force assistive technology into this room; instead, let it naturally become a part of your daily activities. Think about your students who are using devices like switches and other mid-tech items. If you have spare ones, build them into the stations or other activities that all students can use. I always like using switches to activate things like lights or music to enhance the room as well as make these devices common in the minds of the students.

An example of how AT that was lying around could be put to a different use came after the pandemic. I was asked by a large district on the East Coast to help their school nurses address the well-being of the students in a time where the nurse and nurse's office were associated with “sickness” and feared to a great de-



AbleNet Talking Brix 2



Attainment Company GoTalk Communicators



AbleNet Quick Talkers

gree. When preparing for the PD session, I asked the nurse-lead to investigate what types of AT were in some of the buildings and were not being used. I learned that they had a number of AbleNet BIG Mack devices. So what I did was create an activity which asked the nurses to find one of these devices in their building and do the following things:

1. Record a positive affirmation on the device – some of you have seen my “You are Awesome” version during my presentations
2. Hang that device just inside their office door

What we saw happen over the next few months spoke to the mental health needs of those students. The nurses reported more students popping into their office just to press the BIG Mack and hear that affirmation. For some of those students, that may have been the only compliment they received that day or even week. The nurses began to engage with students in a way that empowered the students to share how they were. The nurses heard that affirmation throughout the day and shared that it was always a nice break. One nurse even shared that she would go up and use it herself when she needed the affirmation. The beauty of this seemingly simple application of this piece of AT lay in the fact that it began to desensitize all students, especially the neuro-typical ones, to the use of single-message communicators and switch-like devices. One nurse shared a story about how she was visiting the lunchroom and saw a group of students around a student in a wheelchair who had a BIG Mack on her tray. They wanted to know what she had recorded on it and how they could get one too! Imagine the psychological boost for that student who had to use a device which was suddenly popular with peers.

As we enter this academic year, literacy and mental health continue to be main focus points for our schools. You can create stations within your classroom that address both of these and allow the students to work on their own skills. For those of you who are working with students in the early grades or who have some processing difficulties, creating a station where manipulatives



AbleNet Big Mack

are available as part of basic phonics and early literacy activities is essential. Whether you are using refrigerator magnets for letters or numbers on a magnetic board, sandpaper letters, alphabet pebbles, or any other option of letters and numbers that can be touched and moved is important. Let those lessons in putting words together or practicing sounds have something tactile to engage with to add a depth of learning. Some of us who taught literacy have used tools like plastic bins filled with dried beans, rice, or dried corn and had the students trace letters and numbers in them. This can still be an effective method but does create the potential for some clean up if those are spilled or the need to change out the materials during cold and flu season.

When using a station like this in your classroom, the next station should be one that builds in some calming exercises. That combination of cognitive activities around literacy augmented by tactile interactions for learning enhancement can be draining. The next station can have activities which teach solid life skills as they grow. Have some breathing exercises and again use cards that can be held to add a little more depth. Look at either getting or making some breath cards that the students can trace. For example, having a square drawn on a card with arrows going clockwise can assist in guiding the students through a “box breathing” exercise by having them trace the lines. Aside from breathing, consider having some classroom and socially appropriate fidgets at that station with this idea of allowing the release of kinetic energy with something small. Include activities which engage in simple movement like standing up, turning 360 degrees, and sitting back down. Any of these activities can be used in multiple environments as well as used throughout their lives.

One of the tools that I believe is essential today with everything we are encountering in education is a visual timer. It is a great tool that can keep things on track along with supporting the mental well-being of students (and staff!) Those of you who have seen me know that I use visual timers every day. I have two at my desk while I am writing this and use them for activities I have during the day. I am going to speak of Time Timers here as I believe in what they do and love the research they have put into their devices. At my desk, I have a 20-minute **Time Timer Plus**. I use that one when I am doing tasks like email or reports so that I remember to take a break, even if it is just to stand up and get another cup of coffee. I also have a 60-minute **Time Timer Mod** in a **Time Timer Dry-Erase Board**. I use that for meeti management and during presentations so that I can have major points on the dry-erase board as well as a quick visual check on time left. I will use a **Time Timer Max** during my presentations to keep everyone, especially me, aware of how we are progressing. I even carry a **Time Timer Twist** in my bags when on the road so I can maintain a level of consistency wherever I might be. I know many of you are aware of the research around using visual timers. For those of you who are not, visual timers decrease the levels of anxiety within individuals when completing tasks or assignments. This occurs due to the visual cue of how much time is left. Simply using a



Time Timer Plus



Time Timer Mod & Dry-Erase

clock or watch means that there needs to be an understanding of how time works instead of just viewing the passage of time. I recommend using visual timers for all activities in the classroom as it allows for better focus and attention and less questioning about how much time is left.

One of the questions I receive at the beginning of each new year is “What are the best devices to have in my classroom?” The answer to that is completely dependent upon you and your students. Consider the devices which are working for them. Why are these devices working and are they scalable for what that student will need in their future? Always base your thoughts on the SETT framework and know that although there may be some



Time Timer Max



Time Timer Twist

“cool, new” devices on the market, they may not have the impact that individual needs. The caveat is to not force students into using devices which other students have used in the past if you see they are not working. Ask if you can trial devices through local AT groups in your state. Utilize resources like Closing the Gap to better understand devices both old and new to gain a better understanding of them and their potential applications. Find those people who understand the variety of available assistive technology and are not locked into only one manufacturer or believe in a one-size-fits-all approach. I have encountered groups who came to me worried that the person with whom they had been dealing kept steering them to a specific product or group of products which were not meeting the needs of their students. If you do need to order devices, please be aware of where you are ordering. We are starting to see knock-off products in the market as

well as a lack of support when issues are encountered. Stay with groups you can trust for your orders. You may also see that for your current students, the devices you have will continue to help them and be exactly what you need.

By thinking through how your classroom will flow into your lessons using the tools you have on hand or can get quickly, you are setting yourself and your students up for a successful year. You are adding a level of organization and purpose into any changes you make during the day, increasing their tolerance to change. You are also creating shifts in the environment while making this part of their routine (e.g. my desk belongs over against that wall for writing time and over in the middle for math). Although you may make those shifts part of the daily routine, these shifts are still environmental changes. They are also adding in movement to these shifts and the view of different areas of your room. The subtlety of change may have long-lasting positive effects beyond your classroom as they have to learn to navigate the world beyond the classroom walls. The addition of assistive technology into the room for common purposes also helps to create an understanding that the teacher or authority figure is not the only way to receive directions or find guidance. You are creating for them an environment which can help them move towards a level of independence without needing direct instruction. ■