




Breaking down Barriers:
Using AAC systems Effectively

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Disclosure Statement


- Anne Kuhlmeier, AT Coordinator/Speech-Language Pathologist,
 - Employed by St Luke's Children's Rehab of St Luke's Health Care System
 - Consultant to Idaho Assistive Technology Project through the University of Idaho
 - Complimentary conference registration was provided by Apraxia Kids.
 - No other relevant financial or nonfinancial relationships to disclose



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Learner Outcomes

- Participants will identify 3 barriers to implementing AAC systems
- Participants will identify 3 behaviors communication partners should adopt to positively influence use of AAC system
- Participants will identify 3 strategies for training communication partners to an AAC User



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The Purpose of Communication

Purpose	Meaning	Steps in Reaching Goal	Vocabulary	Purpose	Meaning
Express wants and needs	To gain desired object, requesting AND/OR protesting/negating against object	gaining attention & initiating interaction; indicating desired object or action	<ul style="list-style-type: none"> Want, more, go, help All done, stop, no, not, different 	Express wants and needs	To gain desired object, requesting AND/OR protesting/negating against object
Develop social closeness	To establish & develop personal relationships	maintain the interaction and maintain engagement of both participants, both are equally engaged	<ul style="list-style-type: none"> social routines (tickle, peek-a-boo) story reading, turn-taking in games, activities 	Develop social closeness	To establish & develop personal relationships
Exchanging Information	To give or receive information on shared topic	Establishing shared focus and developing a topic	<ul style="list-style-type: none"> Labeling objects, asking or answering questions, commenting on events, objects, people 	Exchanging Information	To give or receive information on shared topic
Fulfilling social etiquette routines	To conform to social conventions of politeness	Completing designated routines politely	<ul style="list-style-type: none"> Please/thank you Hello/how are you?/I'm fine Identifying yourself 	Fulfilling social etiquette routines	To conform to social conventions of politeness

What is AAC?

Augmentative and alternative communication (AAC) includes all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas.

We ALL use AAC when we communicate through text, email, or a symbolic gesture.

AAC includes:

- Low tech: picture boards or books, communication symbols, sign language, voice output buttons/switches, PECs or PODD books
- High Tech: Tobii Dynavox I Series; PRC Accent, Vio, Saltlilo NovaChat, Forbes ProSlate, EyeTech HD

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“By recent estimates, well over 2 million persons who present with significant expressive language impairment use AAC”

www.asha.org/njc/aac/#aided.com

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Who Uses AAC?

ANYONE – Communication is a multi-modal activity!

- People with limited speech
- People with visual impairments
- People with motoric impairments
- People with unintelligible speech
- People with maladaptive behaviors



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Why Do we Use AAC?

- Create a way to communicate and socially interact with others
- Increase receptive and expressive language skills
- Encourage cognitive development
- Support work and educational opportunities
- Promote speech development
- Clarify speech productions
- Boost participation in community

**Gail Van Tatenhove 2013*



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AAC Myths

Myth: A widely held but false belief or idea

Myth 1:
AAC will reduce an individual's motivation to improve speech & hinder language development.

- Natural speech and AAC integration can successfully be approached in a dual paradigm approach, similar to managing multiple languages (Ommen & McCarthy, 2014)
- Simultaneously targeting natural speech and AAC was linked to positive changes in both communication and speech production goals in 3 children "Target Natural and AAC Speech Simultaneously to Reach Goals" (ASHA Leader, 18, 7, July 2013) <http://doi.org/10.1044/leader.18.07.01.13>
- The use of AAC does not affect motivation to use natural speech and can, in fact, help improve natural speech when therapy focuses simultaneously on natural speech development and use of AAC in a multimodal approach (Miller, Light, & Schlessler, 2006; Sedey, Rosin, & Miller, 1991).
- Intervention for minimally verbal school-age children with ASD that included use of an SGD increased spontaneous output and use of novel utterances compared with the same interventions that did not include use of an SGD (Kasari et al., 2014).
- AAC can help decrease the frequency of challenging behaviors that may arise from frustration or communication breakdowns (Carr & Durand, 1985; Drager, Light, & McNaughton, 2010; Miranda, 1997; Robinson & Owens, 1995).

Myth 2:
Young children aren't ready for AAC

1. Early implementation of AAC can aid in the development of natural speech and language (Lüke, 2014; Ronski et al., 2010; Wright, Kaiser, Reikowsky, & Roberts, 2013) and can increase vocabulary for children ages 3 years and younger (Ronski, Sevcik, Barton-Hulsey, & Whitmore, 2015).
2. AAC use with preschool-age children has been associated with increased use of multi-symbol utterances and development of grammar (Binger & Light, 2007; L. Harris, Doyle, & Haff, 1996; see Ronski et al. [2015] for a review).
3. AAC use can lead to increases in receptive vocabulary in young children (Brady, 2000; Drager et al., 2006).

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Myth 3:
Prerequisite skills are necessary, such as:
*understanding of cause and effect
*showing communicative intent
*cognitive skills

1. Measures of pre-communicative cognitive ability may be invalid for some populations, and research suggests that impaired cognition does not preclude communication (Kangas & Lloyd, 1988; Zangari & Kangas, 1997). Development of language skills can lead to functional cognitive gains (Goossens', 1989).
2. AAC intervention for children with complex communication needs helps develop functional communication skills, promotes cognitive development, provides a foundation for literacy development, and improves social communication (Drager et al., 2010)

Barriers to Implementation

Attitudes	Knowledge	Equipment
<ul style="list-style-type: none"> Child will stop talking if encouraged to use picture Child has to use low tech before getting an electronic system They are just lazy/don't want her to become lazy I don't want him/her to become dependent on extraneous things AAC is only used in select environments (only home or school for instance) 	<ul style="list-style-type: none"> EVERY team member needs training Education/training/coaching – not just 1 and DONE 1 AAC expert, stretched thin Changing team members 	<ul style="list-style-type: none"> No low tech boards or books No way to design symbols/boards/books No tablets No Apps or Software Too many choices available

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Breaking Down Those Barriers

What can YOU do to make AAC Implementation Easier

- Track data What's working? What's not?
- Awareness/education/training/coaching
- Create a receptive AAC community
 - ✓ Make AAC systemS available EVERYWHERE, ALL THE TIME
 - ✓ MODEL MODEL MODEL
 - ✓ Robust language for ALL

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Types of AAC Systems

LOW TECH	HIGH TECH
<ul style="list-style-type: none"> Single pages or books Visual scenes or grids Velcro, magnetic, single pages 	<ul style="list-style-type: none"> Iconic language designs Picture/icon sets Various voices Interface features

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Questions to ask when choosing AAC

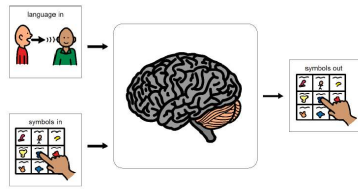
About AAC Systems, especially SGDs

- How is vocabulary organized?
 - Basic & functional addressing wants and needs
 - Single Words available for novel utterances
 - Pre-programmed phrases
- What grammar features for growing language exist
- Is there color coding? Does it make sense? Is it helpful?
- Is there a message window? How do you clear a message? Can you speak without touching the message window?
- Is there a keyboard and does it have word prediction?
- How does the user combine or gather words into sentences?
- How robust now and for the future?



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Why Use Symbols to Communicate?



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AAC Competencies


- **Operational:** skills required to operate AAC system(s)
- **Linguistic:** receptive and expressive language skills
- **Strategic:** Using AAC in every environment
- **Social:** pragmatic social skills using AAC system



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Operational Competency

- High Tech
 - ✓ *Turning it on/off, charging,*
 - ✓ *Finding words*
 - ✓ *Personalize*
- Low Tech
 - ✓ *Single or multiple pages*
 - ✓ *Operate on the fly*

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Strategic Competency

- Where is my AAC?
 - ✓ *1-2 second rule (Caroline Musselwhite)*
 - Always OPEN
 - Always ON
 - Always AVAILABLE
- How many Opportunities are available to communicate using their AAC system (1992, Goosen, Craine and Elder)
 - ✓ *200 opportunities a day!*

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Linguistic Competencies

- Receptive Language
 - ✓ *Understanding symbols*
 - ✓ *Comprehension of symbols in context*
- Expressive Language
 - ✓ *Using language – single words than building to sentences*
 - ✓ *Symbols = words*

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Vocabulary Selection

How do you choose what vocabulary to start on?

- Core Vocabulary (words used across all environments)
 - ✓ Out of 400 words used, 78% are core vocabulary
 - ✓ Core vocabulary are verbs & prepositions – on, go, I, want, no
- Fringe Vocabulary (words personal to AAC User, relevancy to situation/activity)
 - ✓ Personal and motivating, noun labels
 - ✓ Santa, bubbles, Bubble Guppies, Anne



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Top Words Used by Toddlers

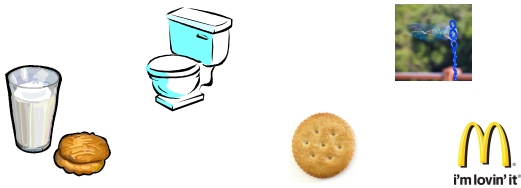
Banajee, M., DiCarlo, C., & Buras-Stricklin, S (2003).

- | | | |
|----------------------|----------|-------------------|
| 1. a | 10. mine | |
| 2. all done/finished | 11. more | |
| 3. go | 12. my | 18. that |
| 4. help | 13. no | 19. the |
| 5. here | 14. off | 20. want |
| 6. I | 15. on | 21. what |
| 7. in | 16. out | 22. yes/yeah |
| 8. is | 17. some | 23. you |
| 9. it | | used 96.3% |



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How many of those words were picture words?
The words typically seen on AAC systems.....



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Social Competencies

- Building social closeness
- Saying "I love you" or "bug off"
- Completing greetings with peers/adults
- Social routines?

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Modeling Statistics

- How many words does a typically developing child from an average working class family hear per HOUR?
 - **1, 251** (Hart & Risley, 1995)
- How many words does a typically developing child from an average working class family hear per YEAR?
 - **6,000,000!** (Hart & Risley, 1995)
- How many symbols does a child with a disability see other people use to communicate in one YEAR?
 - Often..... **Zero!** (Miranda, 2003)

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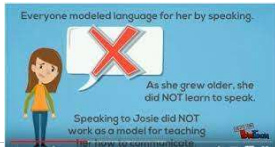
Terminology In AAC

- ✓ *Responsive Aided Language Input*
- ✓ *Aided Language Modeling*
- ✓ *Aided Language Stimulation*

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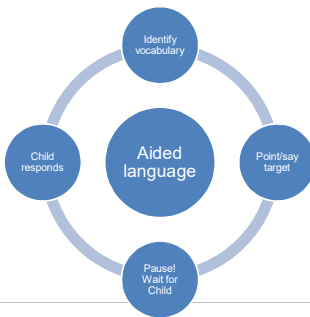
Aided Language Stimulation

- <https://youtu.be/f1FNMky22-U>
- Created by Christopher Bugaj using PowToon



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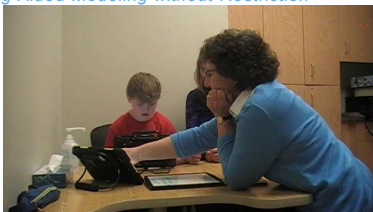
How do we Teach AAC Systems?



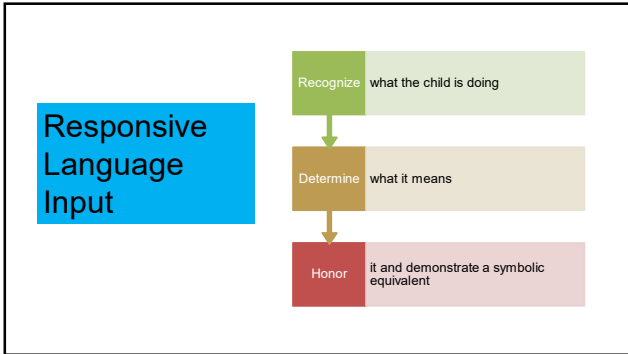
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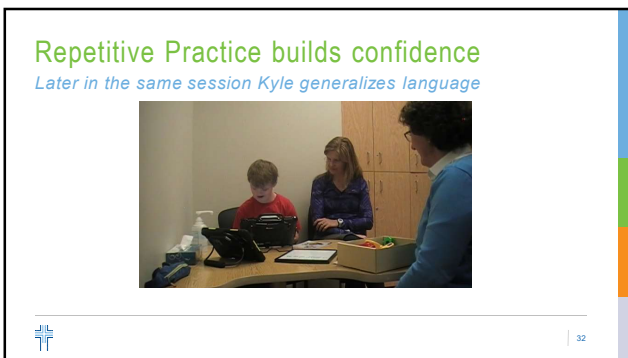
Using Modeling to Support Communication

Providing Aided Modeling without Restriction



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- Communication Partner Barriers**
- Dominate interaction
 - Ask predominately yes/no questions
 - Take most of the turns
 - Provide few opportunities for AAC User response
 - Interrupt communication attempts
 - Focus on the technology or AAC system
 - Use Drill and Kill technique
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Coaching the Communication Partners

- In-service of Theory and Description
- Demonstration and Modeling
- Practice
- Feedback
- Coaching
- Reflection
- **ONGOING HABIT**

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AAC Communication Partner Training Programs

- ImPAACT Program
 - ✓ <https://pubs.asha.org/doi/abs/10.1044/aac22.1.51>
- Power: AAC Modules
 - ✓ <https://www.pattan.net/Assistive-Technology/AT-for-Communication/POWER-AAC>
- MASTER PAL Series
 - ✓ <https://practicalaac.org/practical/master-pal-aac-training-series-lessons-learned/>
- SMORRES
 - ✓ <https://practicalaac.org/practical/how-we-do-it-smorres-and-partner-augmented-input-with-df-jill-senner-matthew-baud/>
- Project CORE
 - <http://www.project-core.com/implementation-resources/>

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ImPAACT Program

ImPAACT Program Step	Session Number	Goal	Instructional Activities within Specified Content
1. Pre-test & commitment	1	<ul style="list-style-type: none"> • Provide illustrations "with" & "without" use of targeted strategy • Obtain formal commitment 	<ul style="list-style-type: none"> • Review pre & post videos • Discuss differences • Review & Sign contract
2. Strategy description	1	Describe targeted strategy and component skills.	Provide & review a visual aid/handout
3. Strategy description	1	<ul style="list-style-type: none"> • Model use of targeted strategy • Provide metacognitive explanations 	<ul style="list-style-type: none"> • Role play • Think-aloud statements
4. Verbal practice	1-3	Increase automaticity in executing strategy components	Rote verbal rehearsal; practice naming (RAAP)
5. Controlled practice feedback	1-3	Provide multiple opportunities for practice in controlled environment	Role play; provide & fade feedback; increase complexity of responses
6. Advanced practice & feedback	4-6	Provide multiple opportunities for practice of targeted strategy in natural environment	<ul style="list-style-type: none"> • Live interaction in natural setting • Provide & fade feedback, errorless learning approach
7. Post Test & commitment	Final Session	Provide illustration of learning/improvements in AAC user	<ul style="list-style-type: none"> • Review pre & post videos • Reflection • Generate action plan for generalized long-term plan
8. Generalization	Final Session	Provide support in learning how to generalize use	<ul style="list-style-type: none"> • Live interaction w/in add. Activities • Provide & fade feedback

SMOORES Approach

S	Slow Rate – slow speech rate. Speak in slow, clearly articulated manner.
Mo	Model – Say words/phrases that are related to the contextual information available while pointing to pictures on the AAC User’s board/device. Use parallel talk (describing what the child is doing as you are doing it) is helpful in modeling.
R	Respect and Reflect – Provide the words to code the child’s wants, feelings, and intended messages doing so with making the child repeat (Child points to drink, Adult models “drink, I want drink”
R	Repeat – Frequently repeat utterances
E	Expand – Repeat and rephrase, building upon your own single word utterances by adding 1-2 words to provide a more complete phrase or sentence.
S	Stop – Provide an expectant pause to allow the child time to respond
	- Senner & Baud, 2015



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Master PAL Approach

<http://bit.ly/ModelasaMASTERPALtrainingmodule>

M	Motivate
A	Accept multiple modalities
S	Statements more than questions
T	Time (wait time, and time for growth)
E	Engage naturally
R	Response not required
P	Presume competence
A	Appropriate prompting
L	Let the child lead



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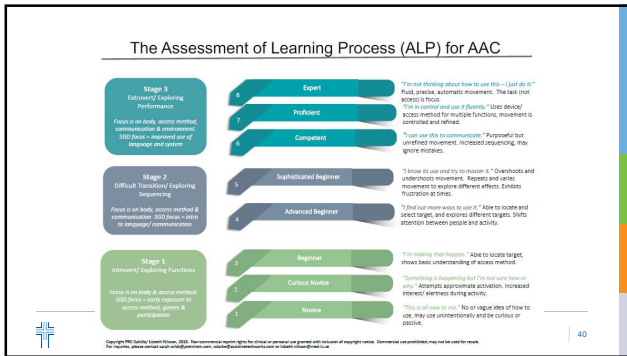
Project CORE Implementation Model

<http://www.project-core.com/implementation-resources/>

- Identify and attribute meaning to all communication
- All students have access to University Core vocabulary on their personal AAC systems
- Grow students communication/language thru aided language input
- Take advantage of natural occurring opportunities



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Where to Start? -
Keep It Simple

- Identify a time/activity**
 - Needs to be FUN
 - MOTIVATING
 - Have opportunities to "talk" - Silence is NOT golden
 - Repetitive - so you can practice the word multiple times
- Identify vocabulary you can target/say frequently**
 - Core - prepositions, verbs
 - Start simple - maybe only one word at a time

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Possible Activities
Great for repetition, engagement, practice core words

- Art or Music
- Shared Reading - Eric Carle, Tell Me Series, TarHeel Reader (online), repetitive lines
- Games - Simon Says, Go Fish, I spy, Jenga, Connect 4, Angry Birds
- Building activities or sequencing (Cooking, putting something together (Marbleworks, gears-go-round, cars))

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Modeling in Shared Reading

Using low tech AAC Core Board & I went Walking Board



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Participation Plan

Goal	Class, Activity or communication opportunity	Specify AAC targets (vocabulary, phrases, Communication functions)	Icon Sequence	Intervention Strategies	Communication Systems/Tools and Resources	Outcome
Insert Goals to address	Input schedule	Gather information re: targets from team	Path to find vocabulary on device/system	Determine Appropriate prompts/cues	Select Unaided or Aided language systems to utilize	Document progress and outcomes

Label 10 actions with AAC Device	Work Time	Label Actions	Model	Word lists + Actions
Given verbal prompt, will communicate needs	Help Kidz Learn	Social Phrases "Awesome" "D'Pon't Like"	Model Verbal Cues (point to pictures on device)	Quickphrases + Greetings & Social
	Read Aloud	Lunch Choice "I want choice 1" "I want choice 2"; "I want more" "I want a drink."; "all done"		Topics + Cafeteria + General; Topics + Cafeteria + Getting Food; Core + All Done
Given verbal prompt, will communicate needs	Lunch	"I need to use the bathroom"	Model	Quickphrases, Personal Needs
Respond to Greetings	Bathroom	Greetings "hi" "bye"	Model	Quickphrases, Greeting & Social
Given verbal prompt, will communicate needs	Walk	"I want ball" "Do you want to play?"	Model Verbal Cue of "What do you want?"	Topics + Games + Game Talk + Let's Play + Ball; Topics + Games + General + Do you want to play
	Recess	Greetings "hi" "bye"; Social Phrases		Quickphrases, Greeting & Social
Respond to Greetings	Rest Time			
	Gen Ed - Centers			

Core Vocabulary Scripts



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Using Core Words – Snack & Lunch Time Script

Below are words to model during snack or lunchtime. Provide small portions to increase number of opportunities for modeling and communication. Be sure to touch the pictures (**bolded words**) along with verbally stating the word/entire sentence. Aim for 200 communication opportunities across the school day.

You DON'T WANT THAT.	READY for MORE?	Time to STOP .
You WANT MORE.	It's ALL GONE .	ALL DONE
MORE of THAT	YOU DID it.	YOU need HELP .
MORE of THAT	I will HELP .	WHAT'S for lunch?
You WANT MORE of THAT	LOOK , here's some juice.	WANT THIS?
It's GOOD	LOOK , here's a cookie.	WHAT do you WANT ?
It's BAD	You WANT something DIFFERENT .	Are you ALL DONE ?

AAC needs to be EVERYWHERE

Achieving the 1 second rule of Accessing AAC quickly



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What things do you need to do now?

Building AAC competency Takes a Village

- Learn the AAC Language
- Identify vocabulary you want to target
- Include EVERYONE in use
- MODEL MODEL MODEL
- **INSPIRE** NOT Require!



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10 Wishes from an AAC User

- I wish my friends would joke with me.
- I wish my teacher would learn how to work my communication aid
- I wish adults would stop shouting at me like I can't hear.
- I wish my therapist wouldn't have a heart attack when my machine doesn't work.
- I wish my people would remember that I don't always spell very well.
- I wish my friends would have more patience with me.
- I wish my teacher would call on me for share day.
- I wish everyone would just give me enough time to say what I'm thinking.
- I wish people wouldn't hit my machine when it doesn't work. That's my mouth they are hitting!
- I wish I could walk and talk like my sister and brother.



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Web Resources for Implementation

My favorites

- <https://aaqlanguage.com/>
- <https://prAACticalaac.org/>
- <https://podcasts.apple.com/us/podcast/talking-with-tech-aac-podcast/id1300126888>
- <https://ussaac.org/>
- <https://aacscotland>



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CASANA 2021 National Conf.

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