

Bridging the Sign Language Gap for Low-Language Students: Using AAC Devices

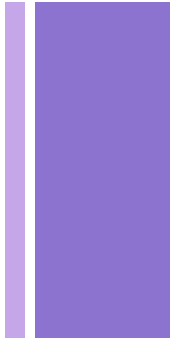
Whitney Merritt M.S., CCC-SLP

Regional Day School Program for the Deaf/Hard of Hearing
Plano ISD

whitney.merritt@pisd.edu

+ Financial Disclosure:

- ❖ I have no relevant financial relationship(s) or non-financial relationship(s) in the products or services described, reviewed, evaluated, or compared in this presentation.
- ❖ Employed by Plano Independent School District



+ My Education



ABILENE
CHRISTIAN
UNIVERSITY

❖ B. S. – Communication Sciences and Disorders

❖ M. S. – Speech-Language Pathology; Deafness Specialty Certificate



**NAZARETH
COLLEGE**

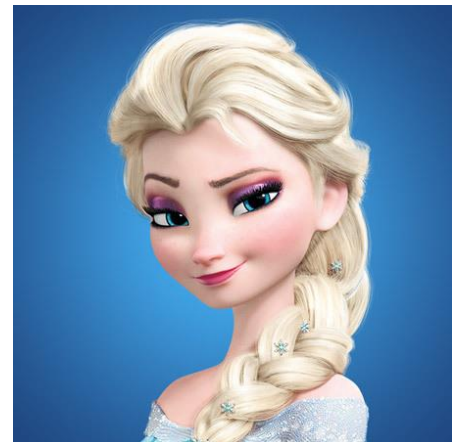
+ Get to Know Me

I easily “nerd out” about:

- ❖ New speech therapy materials
- ❖ The detailed workings of the inner ear
- ❖ Nature
- ❖ Books
- ❖ Movies: Especially Disney – therefore, I have replaced any students’ names with a couple of Disney princesses.

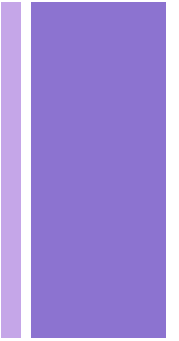


Meet Ana and Elsa!

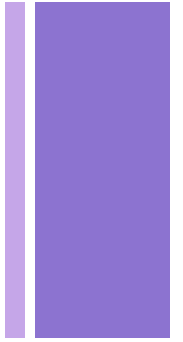


+ Get to Know You

- ❖ How many parents?
 - ❖ Teachers?
 - ❖ SLPs?
 - ❖ Administrators?
 - ❖ OTs/PTs?

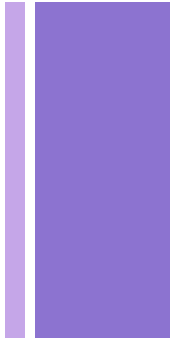


+ Getting to Know Our Kids



- ❖ How many of you work with children?
 - ❖ Pre-K?
 - ❖ Elementary?
 - ❖ Secondary/High School?
 - ❖ In total communication programs?
 - ❖ Multiple disabilities?
 - ❖ With low language skills?

+ Reflect & Discuss

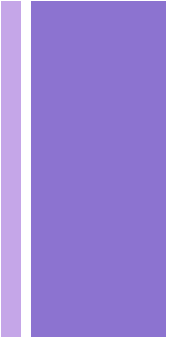


Reflect: How many of your students...

- ❖ Struggle to learn sign language, even though they have been exposed to sign since they were young?

Discuss: What does it mean to you?

- ❖ Total Communication
- ❖ Augmentative/Alternative Communication

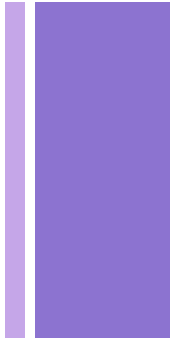


Definitions

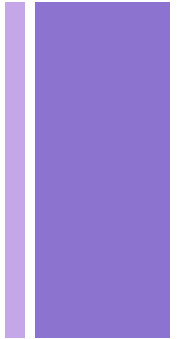
+ Total Communication (TC)

According to ASHA:

- ❖ “TC incorporates all means of communication: signs, natural gestures, fingerspelling, body language, facial expressions, listening, lip reading and speech to optimize language development.
- ❖ **TC will and should look different for each child.**
- ❖ **The TC philosophy adapts to the individual needs of the child in order to facilitate understanding, learning and language development.”** [3]



+ Augmentative/Alternative Communication (AAC)

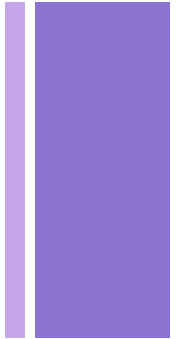


ASHA defines AAC in two ways:

1. Unaided AAC
2. Aided AAC Devices

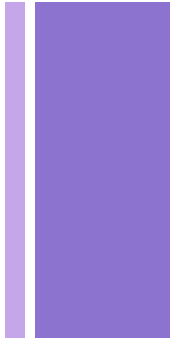
+ Unaided AAC:

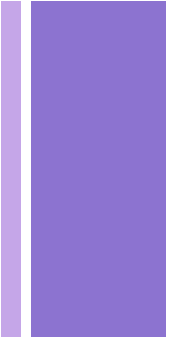
- ❖ “Nonverbal means of natural communication (including gestures and facial expressions) as well as manual signs and American Sign Language (ASL).
- ❖ **These forms of communication do require**
 - ❖ **adequate motor control**
 - ❖ **communication partners who can interpret the intended message.” [4]**



+ Aided AAC Devices:

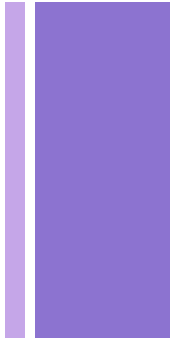
- ❖ “*Aided forms* of communication consist of those approaches that require some form of **external support**
- ❖ communication board with visual-graphic symbols (i.e., pictures, photographs, line drawings, Blissymbols, printed words, traditional orthography)
- ❖ computers
- ❖ handheld devices
- ❖ tablet devices with symbols, words, letters, or icons that “speak” through synthetically produced speech or recorded natural (digitized) speech.” [4]





Setting the Scene

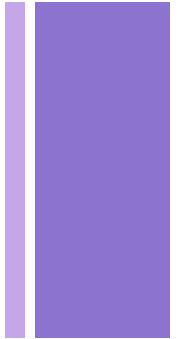
+ Plano ISD



- ❖ **Has Oral Classrooms and Total Communication Classrooms**
- ❖ **Utilizes Signed Exact English (SEE) for Pre-K-5th grade.**
 - ❖ **Supports literacy and written English development.**
 - ❖ **Students may use ASL in older grades, if they so choose.**

+ The Problem

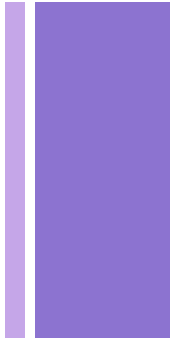
- ❖ Worked with the same group of students for 3 years
- ❖ Observed them extensively
 - ❖ In my speech room
 - ❖ In their classrooms
- ❖ With an average of 2-4 years of sign exposure, shouldn't these students have a larger sign language repertoire by now?



+ Classifying the Students

- ❖ **Elsa**: typical, non-verbal IQ scores, struggled to learn signs.
 - ❖ Really good at imitating
 - ❖ Demonstrated increased behavioral outbursts/refusal.
 - ❖ Showed some red flags for Autism.
- ❖ **Ana**: with multiple disabilities, struggled to learn signs.
 - ❖ Really good at imitating
 - ❖ Only produced spontaneous utterances consisting of rote phrases such as “I want...”
 - ❖ Could not follow simple directions given in sign.

+ Reflect & Discuss



Reflect:

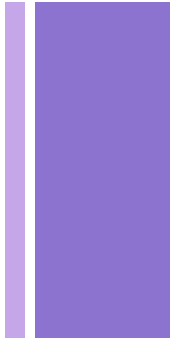
- ❖ Does that problem sound familiar?
- ❖ Did any of your students come to mind?

Discuss:

- ❖ Without using names, share behaviors you may have seen from children who are supposed to be learning sign language, but who continue to present limited language skills and little to no functional language use.

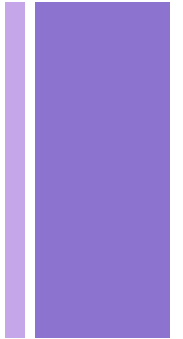
+ The Plaguing Question:

- ❖ How could I support **FUNCTIONAL** sign language development for students who have profound hearing loss and low-language?

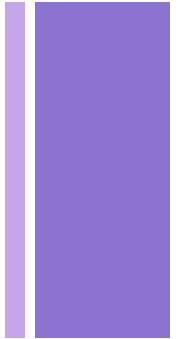


+

The Springboard



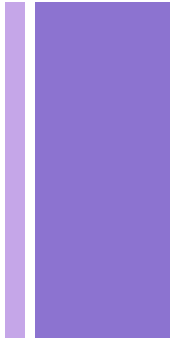
+ Research



- ❖ Ronski et al. (2005, 2010) have indicated that AAC (aided or unaided) use does not appear to hinder, but rather facilitate improvement in children's speech skills. [6], [7], & [8]
- ❖ Solomon-Rice and Soto (2014) brought up the following reasons as to why AAC interventions may be helpful:
 - ❖ Targets are produced with increased emphasis/stress
 - ❖ Slowed rate of communication increases processing time. [9].

+ Research Continued

- ❖ Almirall et al. (2016) found that using speech generating devices with children on the autism spectrum, even though the children were not required to use the devices in expressive responses, still:
 - ❖ led to improved spoken communicative utterances
 - ❖ greater increases in the amount of joint and reciprocal attention
 - ❖ longer, more frequent communication interactions [2]
- ❖ Allen et al. (2017) reviewed the literature and found that AAC use targets more than just expressive skills and also lays foundations for receptive skills. [1]



+ Research Continued

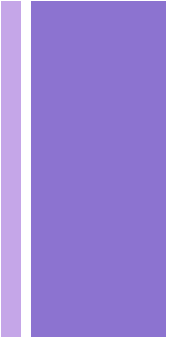


- ❖ Meinzen-Derr (2017) assessed the effectiveness of AAC use with **non-signing children with developmental disabilities along with hearing losses** and found that “using AAC technology shows promise in supporting continued and rapid language growth” among this population [5].

+ AAC: a Tool to Bridge the Language Gap

❖ Marconi (2016) mentioned:

1. “Incorporating AAC during early communication development **requires a focus on language and communication development within the context of the AAC mode...**”
1. Do not get stuck on only learning the device, focus on **language and communication development for the child.**
2. “AAC is not a last resort but rather **a first line of intervention** that can provide a **firm foundation** for the **development of spoken language comprehension and production.**” [4]



How I Approached the Problem

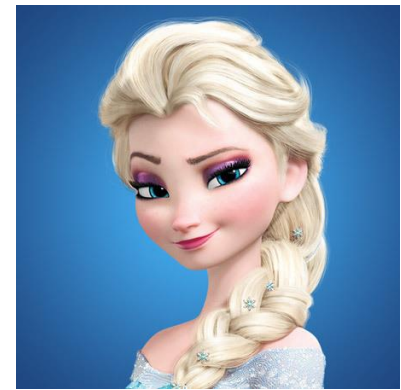
+ Getting to Know Elsa



Family:

- ❖ Youngest of 7 siblings
- ❖ Current Age: 10 (5th grade)
- ❖ Spanish speaking household
- ❖ No sign language at home
- ❖ Seems to do as she pleases because no one can communicate with her.

+ Before Aided AAC Devices



Characteristics

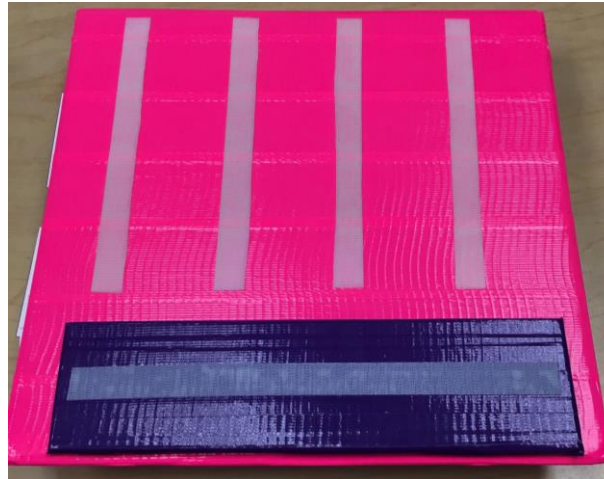
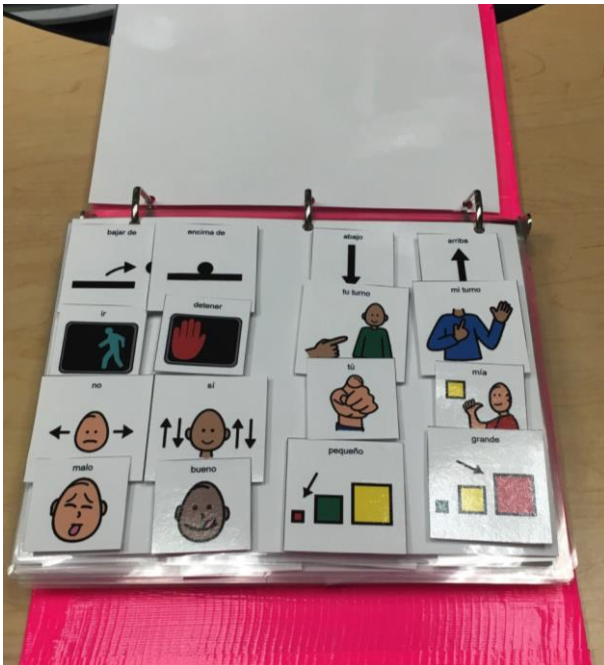
- ❖ Good at imitating adults
- ❖ Refusal to engage/Eye-contact avoidance
- ❖ Gestures, pointing, grunting/yelling
- ❖ Twitching hand on side of head when frustrated
- ❖ Thinking about an Autism referral

Language Abilities

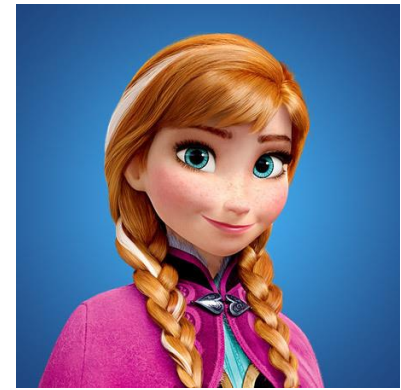
- ❖ Minimal labeling – 1-2 words at a time
- ❖ Low receptive capabilities/low vocabulary
- ❖ “I want please” (no noun or label)

+ AAC Devices

- ❖ Elsa started with Picture Exchange Communication System (P.E.C.S.)
- ❖ After one year of success with P.E.C.S., she moved to an iPad with Proloquo2go (Fitzgerald key)



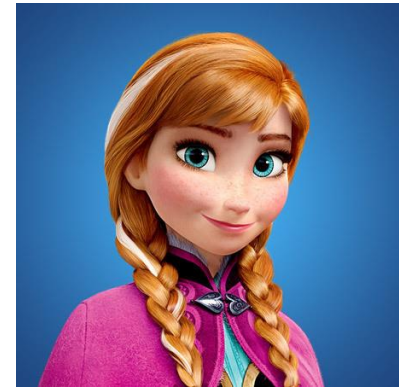
+ Getting to Know Ana



Family:

- ❖ Youngest of 2 children
- ❖ Current Age: 9:4 (3rd grade)
- ❖ Family reports using SEE at home, and also speak Hindi
- ❖ Down Syndrome

+ Getting to Know Ana



Characteristics

- ❖ Some good receptive skills/limited vocabulary
- ❖ Good at imitating/approximating adults
- ❖ Difficulty producing signs/impaired dexterity
- ❖ Gestures, pointing, grunting/yelling

Language Abilities

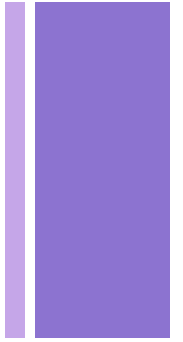
- ❖ Did not initiate communication exchanges
- ❖ Requested familiar objects (limited to snacks/food, and familiar toys) with “I want...”
- ❖ Spontaneous utterances consisted of maybe a string of 2-3 nouns



AAC Devices

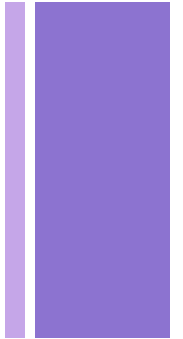
- ❖ Ana started with a Core Board
- ❖ After 4 months of success, she moved to an iPad with Proloquo2go (Fitzgerald Key)





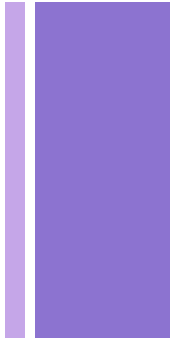
AAC in Action

+ Signs & AAC



- ❖ **Start** by modeling the device **then** “reading” the message.
 - ❖ Low-tech: tap or choose picture then sign the word.
 - ❖ High-tech: create message then “read” what it says using signs.
- ❖ You do NOT have to start with low-tech!
 - ❖ Follow your school or company’s/clinic’s guidelines on providing AAC devices for your students.

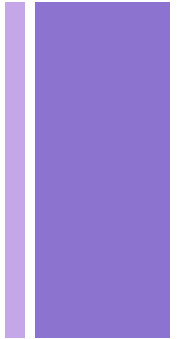
+ Therapy Room



Engaging materials: focus on functional language development.

- ❖ Aided Language Stimulation
 - ❖ MODEL MODEL MODEL!
 - ❖ Core vocabulary – words that can be used multiple times in varying contexts.
- ❖ Words of the week: both teacher and I target same word(s) in multiple situations throughout the week.
 - ❖ AssistiveWare: Core Word Classroom

+ Therapy Room



- ❖ **Vocabulary Walks: go around the room or building – use a specific carrier phrases. (May correlate to your word of the week)**
 - ❖ “I see a door,” “I see a light”
 - ❖ “I go to bathroom”

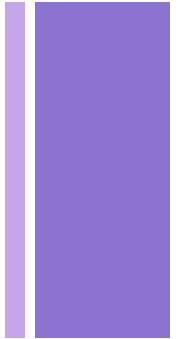
- ❖ **Games – use a specific and repetitive carrier phrase.**
 - ❖ “I have red” / “have red”
 - ❖ “I need” / “need red”
 - ❖ “Your turn, _____”
 - ❖ “I move 3.”

+ Books and AAC!

❖ Literacy based therapy

- ❖ Book Walks – looking for specific vocabulary words while looking through the pages
- ❖ Target 1-2 repetitive words/phrases per book
 - ❖ Examples: I Went Walking
 - ❖ “what do you see?”
 - ❖ “I see...” / “it is in”
 - ❖ The Very Hungry Caterpillar
 - ❖ “Ate....” / “He ate...”
 - ❖ “It is a...”

+ Books and AAC!



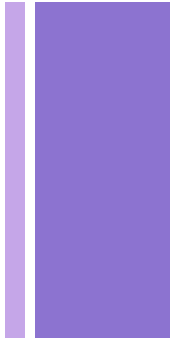
Don't be afraid to repeat the same book!

- ❖ Repetition lends itself to predictability and built in success for your student!
- ❖ Teacher and SLP can use same books, or different books targeting same vocabulary.

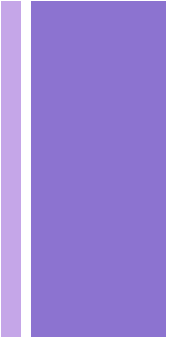
+ Classroom & Beyond

- ❖ Teacher/Para/Staff/Parents – it is **crucial** to have their support!
 - ❖ Need to be willing to learn the device along with the student
 - ❖ Be comfortable with the device
 - ❖ I did **not** say anyone needs to be an **expert** with the device (even the SLP!) to model
- ❖ It is ok to make mistakes – let the child see, and show/model for them how we correct our own mistakes.

+ Classroom & Beyond

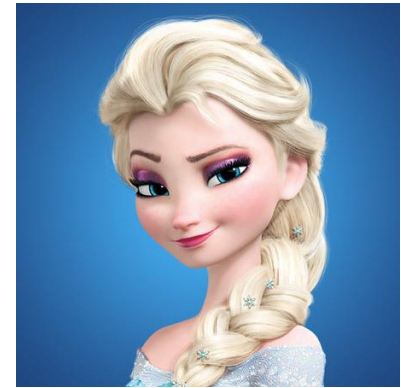


- ❖ You do not need to have scripted activities – the more natural, the better.
- ❖ Incorporate AAC device as many times throughout the day as possible.
 - ❖ Reading, Math, Language Arts, Snack, Lunch, Recess, anywhere and everywhere!



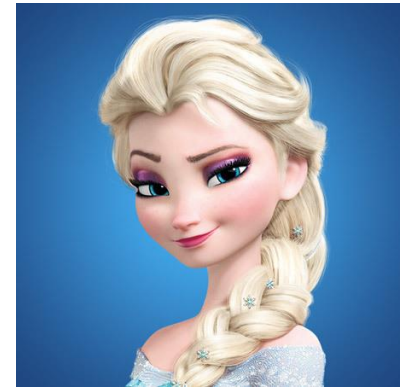
Outcomes

+ Characteristic Improvements



- ❖ Completely different kid!
- ❖ No more concern for Autism
- ❖ Not refusing/avoiding eye-contact
- ❖ Significantly decreased “twitching”
- ❖ Desiring/Requesting new information
 - ❖ Shows adult picture in device to learn the sign
- ❖ Attempting to vocalize per word, instead of grunting or yelling.

+ Language Ability Improvements



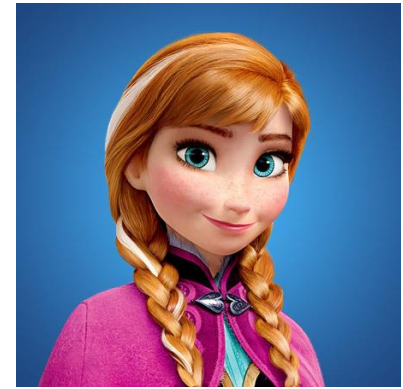
- ❖ Vocabulary Comprehension Increase (Rec./Exp.)
 - ❖ Sign Language
 - ❖ Words in the device
- ❖ Starting to use sentence structures with models/visuals
 - ❖ Noun + Verb
 - ❖ Verb + Adjective + Noun
 - ❖ Slowly incorporating articles
- ❖ Initiating **AND** engaging with peers ***and*** adults
- ❖ Using spontaneous, novel utterances!
 - ❖ “Stop, Ms. Merritt”

+ Elsa in Action

[VIDEO]

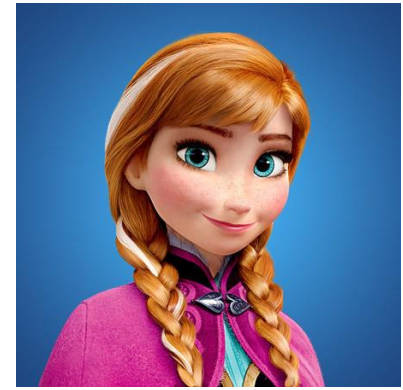


+ Characteristic Improvements



- ❖ Dexterity has improved some due to slowed communication interactions.
 - ❖ Practices letter shapes
 - ❖ Some hand-over-hand assistance
- ❖ Initiating with adults
- ❖ More engagement with peers
- ❖ Purposeful Vocalizing
- ❖ Using grade-level sight words in device!

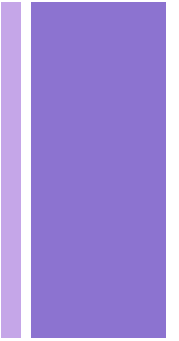
+ Language Ability Improvements



- ❖ Vocabulary Comprehension Increase (Rec./Exp.)
 - ❖ Sign Language
 - ❖ Words in the device
- ❖ Starting to use sentence structures with models/visuals
 - ❖ N+V – “mother sat,” “silly string like”
 - ❖ N+V+A+N – “caterpillar make white egg”
 - ❖ A+N+V– “baby bird come”
 - ❖ Carrier Phrases – “May I have snack please?” “Can I have help cochlear implant (CI) please?”

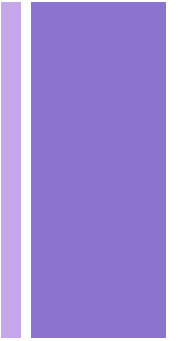
+ Ana in Action

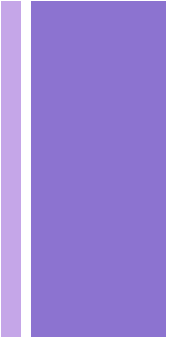
[VIDEO]



+ Ana in Action

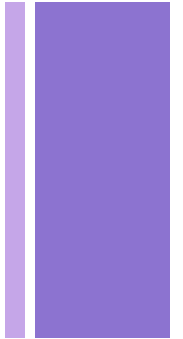
[VIDEO]





Conclusion

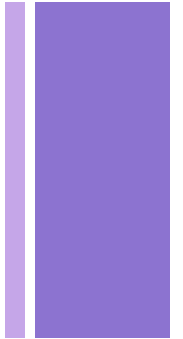
+ Factors to Remember



- ❖ MODEL MODEL MODEL
- ❖ Team approach is crucial to Aided Language Stimulation/AAC Implementation.
- ❖ View AAC device as another tool in the toolbox, helping the child learn sign language.

+ Factors to Remember

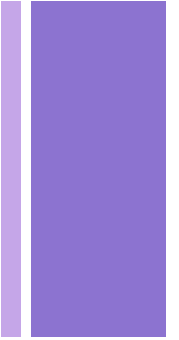
- ❖ No matter if it's high-tech or low-tech, the AAC device offers a static representation of the symbol + the vocabulary word to PAIR with the sign.
 - ❖ That's 3 different visual representations of that word!!!
 - ❖ Repetition is key!
 - ❖ Slowed communication rates = More processing time.



+ Now for the Finale...

- ❖ Identify students who may be struggling to learn sign language.
- ❖ Think about AAC:
 - ❖ Can it be another tool to add to their toolbox?
 - ❖ Always pair the picture/written word with a sign.
 - ❖ Model, model, model
 - ❖ Support AAC device across multiple settings with different partners.
- ❖ Learn along with your student!



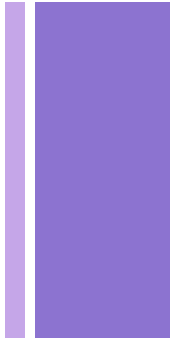


Thank You!
Questions & Answers



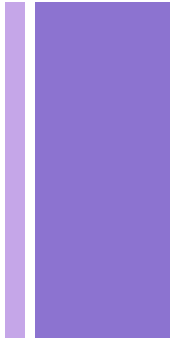
References

1. Allen, A., Schlosser, R. W., Brock, K. L., & Shane H. C. (2017). The effectiveness of aided augmented input techniques for persons with developmental disabilities: a systematic review. *Augmentative and Alternative Communication*, 33:3, 149-159, DOI: 10.1080/07434618.2017.1338752.
2. Almirall, D., DiStefano, C., Chang, Y., Shire, S., Kaiser, A., Lu, X., Nahum-Shani, I., Landa, R., Mathy, P., & Kasari, C. (2016). Longitudinal effects of adaptive interventions with a speech-generating device in minimally verbal children with ASD. *Journal of Clinical Child & Adolescent Psychology*, 45:4, 442-456, DOI:10.1080/15374416.2016.1138407
3. American Speech-Language-Hearing Association (n.d.). Augmentative and Alternative Communication. Retrieved from <https://www.asha.org/NJC/AAC/>
4. Marconi, K. (2016, May 31). Communication considerations for children with hearing loss. ASHA Leader Live. Retrieved from <https://blog.asha.org/2016/05/31/communication-considerations-for-children-with-hearing-loss/>.
5. Meinzen-Derr, J. Wiley, S., McAuley, R., Smith, L., & Grether S. (2017) Technology-assisted language intervention for children who are deaf or hard-of-hearing; a pilot study of augmentative and alternative communication for enhancing language development. *Disability and Rehabilitation: Assistive Technology*, 12:8, 808-815, DOI: 10.1080/17483107.2016.1269210.





References Continued



6. Romski, M. & Sevcik, R. A. (2005). Augmentative communication and early intervention: myths and realities. *Infants & Young Children, Vol. 18*, No. 3, pp. 174–185. Lippincott Williams & Wilkins, Inc. DOI: 10.1097/00001163-200507000-00002
7. Romski, M., Sevcik, R. A., Adamson, L. B., Cheslock, M., Smith, A., Barker, R. M., & Bakeman, R. (2010). Randomized comparison of augmented and nonaugmented language interventions for toddlers with developmental delays and their parents. *Journal of Speech, Language and Hearing Research (Online)*, 53(2), 350-364. Retrieved from <https://libproxy.Library.unt.edu/login?url=https://libproxy.library.unt.edu:2165/docview/507891434?accountid=7113>.
8. Sevcik, R. A., & Romski, M. (2000). AAC: more than three decades of growth and development. *ASHA Leader*, p. 5. <http://link.galegroup.com/apps/doc/A66665379/HRCA?u=txshradcd2679&sid=HRCA&xid=7b6d8436>.
9. Solomon-Rice, and Soto (2014) Facilitating vocabulary in toddlers using AAC: a preliminary study comparing focused stimulation and augmented input. *Communication Disorders Quarterly Vol. 35, Issue 4*, pp. 204-215, DOI: 10.1177/1525740114522856.