Alternative and Augmentative Communication (AAC) & Assistive Technology (AT)

for Students with Deaf Blindness / Multiple Disabilities

HELIX Conference, State College PA
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New York Deaf Blind Collaborative

Overview

- Context and definitions
- Selecting communication systems
- Designing systems
- Implementing systems
- Handouts / Resources

Expanded from a 2 part webinar series in collaboration with Megan Mogan, SLP CCC:

http://www.perkinselearning.org/earn credits/self paced/student centered aac design and intervention part 1 practical collaborative

Objectives

Participants will increase their knowledge and skills in:

- Implementing identified augmentative communication systems (SP.07.f)
- Identifying assistive technology needs (SP.03.i)
- Using specialized communication systems (e.g., calendar, tactile, sign, objects, etc.) (SP.05.zg)
- Implementing strategies to expand the child's/youth s receptive and expressive language and communication (SP.07.c)
- Using a combination of communication methods in order to scaffold learning and enhance comprehension and communication development (SP.06h.)

"I am not an AAC Expert"

Each team member comes to the table with a unique set of background experiences and skills when it comes to designing effective communication systems for students.

The student needs you to be an expert on him/her.

Collaborative Team Approaches

"What does the student need to be able to do that is difficult or impossible to do independently at this time?"

(Zabala, 2005)

Collaborative Team Approaches

AAC Assessment is an Ongoing, Dynamic, Process

- SETT Framework (Zabala)
- The Communication Matrix (Rowland)
- The Process Approach (Hagood)
- Observation

CollaborativeTeam Approaches

- Identify strengths and role(s) of each team member
- Assign an AAC "Case Manager" for the student
- Use consultative or direct service delivery models realistically (be ready to release your role or accept someone else's)
- Determine an efficient Communication System between team members

"I don't have time for team planning."

A student centered AAC system designed by a collaborative team will save time in trial and error and "re inventing the wheel" in the long run.

A student who has quality access to AAC will more than reward your team for their time!

"I don't think I'm the right person to design an AAC system. I cannot keep up with all of the Technology!"

AAC involves multiple systems of communication, not just high tech devices.

Students benefit from AAC systems that provide <u>access to quality interactions</u> with other people. This is always the primary goal.

Image retrieved from: http://www.innovationmanagement.se/wp-content/uploads/2013/04/Exchange-of-ideas.png

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 make facial expressions or gestures, use symbols or pictures, or write.

(ASHA)

Multiple Systems: Unaided Forms (ASHA)

- Vocalizations
- Unconventional forms of Speech
- Actions on people or objects
- Facial Expressions
- Body Movements and Gestures
- Sign Language

Multiple Systems: Aided forms (ASHA)

Communication Displays picture or tangible symbol systems used in exchange, or combined with a point

Communication Device electronic display that may have auditory output

Handwritten or Typed messages

Multiple Systems

allow the student to receive communication from another person (Receptive)

allow the student to send communication to another person (Expressive)

"We don't want to offer fragmented sets of communication, but…We want to always honor the child's right to use whatever communication system works best for them in a particular situation and context."

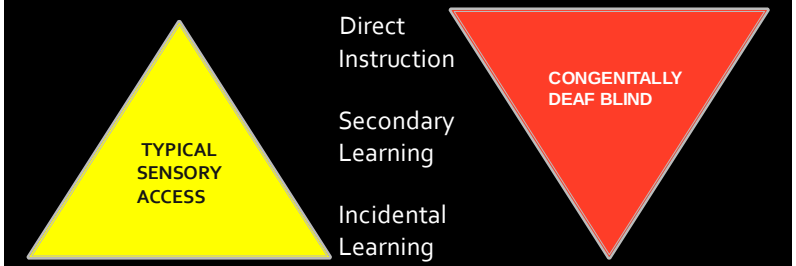
Linda J. Burkhart

Impact of DeafBlindness / Multiple Disabilities

Direct instruction

Children with VI/DB:

- Lack access to incidental learning
- Require facilitated experiences to support development



(Bruce, 2005; van Dijk, 1999; Miles & Riggio, 1999; Alsop, 2010)

A Disability of Access and Experience

Delays in communication development & symbolism
- Use of unconventional gestures and behaviors to communicate
  - Low levels of recognition and response
    - "Severe mismatch" in communication
    - Limited # of opportunities to communicate
      - Low rates of expressive communication
      - Stress, learned helplessness and other behaviors

(Bruce & Vargas, 2007;; Bruce, 2002;; Bruce, 2007)

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Stress and History of Negative Interactions

- Negative interaction
  - Being pulled around
  - Hand--over--hand instruction, FOR not WITH
- More directive instead of interactive
- Reasons behind behaviors
  - Differentiating between tactile defensiveness and history of negative touch

Availability for Learning

How do you know if your student is *available for learning*?

- How can you tell that the student is:
  - Alert?
  - Attending?
  - Responsive or responding?
  - Processing information?
  - Retaining information?

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(Appendix 6)

Internal and External Factors that Influence Availability to Learn

A student's availability to learn changes moment by moment based on the balance between what is happening inside him and what is happening outside him.

Internal factors:

- How the student feels physically & emotionally
- Medical conditions
- Illness or pain
- Impact of medications
- Amount of sleep the night before
- Impact of visual, auditory, and tactile abilities on learning
- Sensory processing or sensory integration difficulties

External factors:

- Lighting (location and type)
- Background noise
- Smells
- The number of people and their movement around the student
- Tactual input
- Physical supports, positioning, or equipment

(Scoggin et al., 2014;; OHOA Module 5)

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Selecting Modes for Expressive Communication

Modes of Communication

- Individuals who are deaf--blind will utilize multiple modes of communication, either simultaneously or at different times for different purposes
- The student may:
  - Shift modes throughout the course of a day based on lighting needs, fatigue, or ease of access,
  - Use multiple modes within the same setting, or
  - Use different modes with different communication partners

Modes of Communication

Pre--symbolic (concrete) modes

- Behaviors, Communicative behaviors
- Touch cues, name cues and name signs
- CONCRETE: Object cues, some tangible symbols

Symbolic (abstract) modes

- Tangible symbols
- Line drawings (some)
- Sign Language
- Spoken Language electronic device, speech
- Literacy modes (Braille, printed language)

Functions of Communication

Why Communicate?

- Refuse / Reject
- Obtain
- Social interaction
- Seek or provide information

A Balanced Communication Plan

Sensory Access

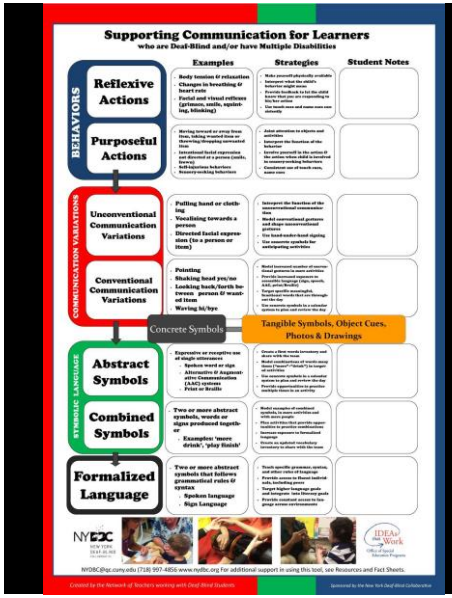
- Vision, hearing
- Preferred learning channels
- Physical access (adaptable)

Communication Level Access

- Presymbolic/Symbolic
- Prelinguistic/Linguistic
- Language vocab selection

- Multi sensory access
- Universal Design

- Model TOTAL COMMUNICATION
- Provide a robust AAC program receptively



Where is your student / child expressively?

- Mastered levels
- Emerging skills
- Across functions of communication?
- Across routines? Communication partners?

Stages of Communication Leading to Language

- Pre intentional Communicative Behaviors
- Intentional Behaviors
- Unconventional Communication
- Conventional Communication
- Concrete Symbols
- Abstract Symbols
- Language

Symbolism

- The understanding that a symbol refers to an event/activity, object, person

  SYMBOL →→REFERENT

- ICONICITY

  ICON →→INDEX →→SYMBOL

  (CONCRETE →→ABSTRACT)

Use abstract modes of communication as models and for exposure, but make sure you scaffold abstract modes with *concrete modes* at your student's current expressive levels.

Touch Cues

- A touch at a specific place on a student's body that is done consistently to convey information about an upcoming event
- Provide information, express wants/needs, give a directive, give feedback
- Concrete referent for sign when paired
- NOT meaningless prodding, prompting, or tapping

Examples of Touch Cues

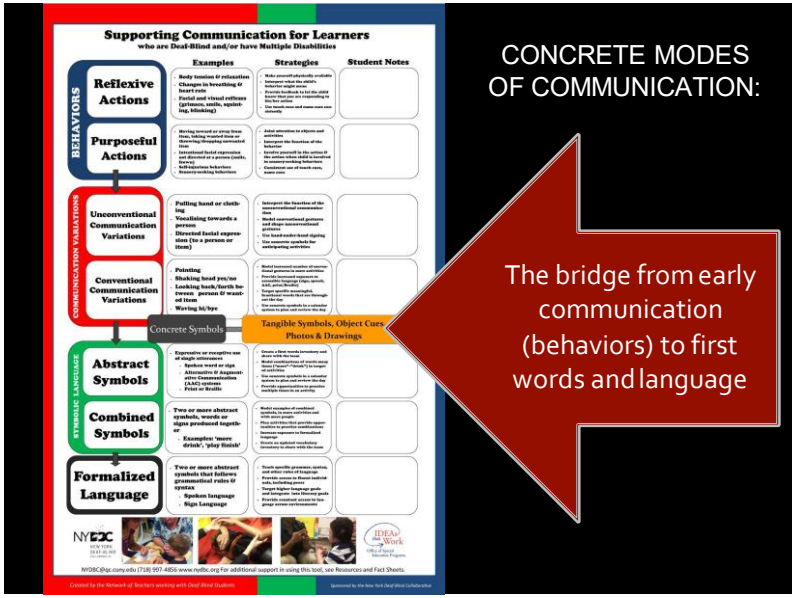
- **Hello** Touch hand, shoulder or back.
- **Sit** Gentle pressure on shoulder
- **Stand** Gentle upward pressure to elbow
- **Yes** Pat or rub on back with appropriate enthusiasm
- **Eat/Drink** Touch their fingers to their lips
- **Put on/take off CI or Hearing Aids** Light touch to side of head
- **Toileting** Tap or gently lift feet while child is lying down
- **Put on/take off orthotics** Light touch to shin / wrist
- **Picking up from lying position** Tap or gently lift shoulders

Name Cues

- A concrete representation of an individual
- A feature of or something a person always wears or has with them
- Used to start and end interactions
- Helps students anticipate and set expectations
- Teaches self concept and concept of others
- Necklace, ring, bracelet, hair, etc…
- Different from a name sign

Conventional Gestures

- For learners who communicate primarily through unconventional modes/gestures and behaviors
- Model conventional gestures in a way that is accessible
- Identify important gestures for communicating



Tangible symbols are tactile, manipulative, representations of activities, objects, places, events, concepts, or people which can be used for expressive and receptive communication.

(Trief, 2008)

Tangible Symbols

Can be:
- whole objects
- parts of objects
- associated objects
- textures or shapes
- line drawings
- Photographs

Consider:
level of iconicity / abstraction

Tactile Tangible Symbols: Considerations

Select based on tactile properties, NOT visual

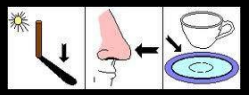
- NO MINIATURES!
- Universal vs. Individualized
- Size, portability, duplicability

Photos and Line Drawings

- Which do you think would be more abstract?

Who should use photos / line drawings?

- Enough vision?
- Understanding of what the photo / drawing represents



Line drawings are very abstract!

Uses of Tangible Cues -Levels

1)Anticipation of an activity

- To learn symbolism – connection between a symbol and referent
- Reducing stress in transitions

2)Communication systems (more complex uses for children/youth who have symbolism

Anticipation Level

1. Show symbol
2. Pair with language
3. Within 30 sec, go to activity / referent
4. Carry symbol to activity
5. Continue to re--introduce and refer to the symbol every 2 min during activity
6. Place in a finished box

7. Repeat!

Video Example: Anticipation

Which symbols to choose?

- activities / objects / people
- Frequent / Recurring
- Preferred

https://vimeo.com/27255274

Communication System Level

- Calendar Systems /Schedules
- Sequencing
- Literacy
- Conversations

Video Example: Beginning Calendar

Moving from Anticipation Cues to Calenders

- # of symbols
- Language exposure
- Multiple modes
- Adaptations

https://vimeo.com/189017210

Video Example: Advanced Calendar

Multiple modes

Increased exploration and indepedence

More symbols, more language

https://vimeo.com/41709256

Labeling the Environment

Tangible cue to identify room for speech lesson

Landmarks & labels

Adapted Individual Uses of STACS (APH)

2 cell Manual Choice Board

1 cell voice output device

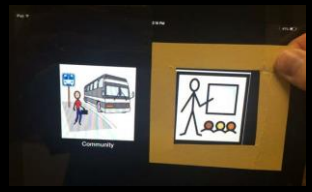
STACS shown courtesy of APH, photos by L. Robinson

Partner--Assisted Scanning

Pointing, showing, speaking messages a student will select

- Facilitate use of current receptive vocabulary
- Teach new symbols/words
- Develop visual skills
- Pair with other modes
- Expand: levels of selection
- Can be used across multiple forms

(Burkhart & Porter, 2012; Hanser, 2007)



Partner assisted scanning on an iPad with a yellow cardboard square cutout/guide

Reliant upon responsive communication partner

Videos & Resources

Multi-Modal Communication
Body Language
Choice Making
Communication Boards
Encoding
Eye Gaze
Eye Gaze Boards (e-tran)
Flipbooks
Gestures
Partner Assisted Scanning (Live Voice)
Speech Generating Devices (SGD)
Spelling (Alphabet Based Strategies)
Verbal Approximations

THE BRIDGE SCHOOL

http://www.bridgeschool.org/transition/multimodal/eye_gaze_boards.php

Devices, Speech Generating Devices (SPD)

- Range of tech (light, high)
- Consider the use of the device

- Will there be receptive opportunities for the student to observe others communicating with the device?

- How will the student learn how to use the device? Modeling? Direct instruction?

Video Example

Modeling communication/use of device

Modeling sentence structure

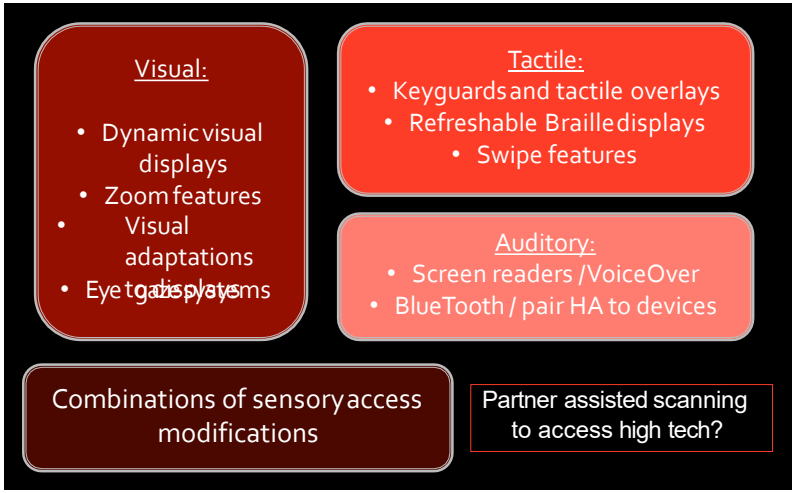
Contexts

https://vimeo.com/198885582

High--tech ideas

- Consider complexity of layout and process
- Make a low--tech backup!
- **"Having an AAC device doesn't make you a communicator any more than having a piano makes you a musician."** – PraacticalAAC.org

Sensory Access: Considerations for High--Tech



LOTS of high tech AT…

http://www.perkinselearning.org/videos/webcast/communication technology persons who are deafblind#chapter5

Humanware

BrailleNote Touch 32 braille notetaker / tablet

Freedom Scientific

Equipment for Deafblind People.

http://www.deafblind.com/dbequipm.html

High tech supplements to low tech modes

Assistive Technology Assessment& Evaluation

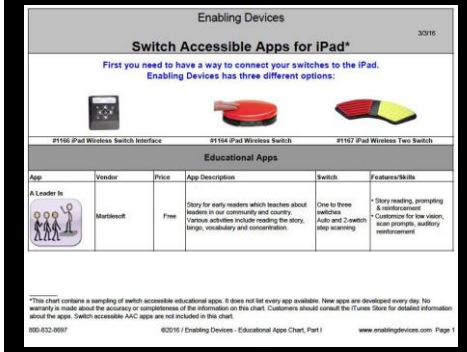
Limited assessmentprotocol for DB / Multiple Disabilities
Some useful assessment tools forVI / DHH

The assessment covers three main areas:

- **Section I**: **Accessing Print**, which covers how the student uses visual, tactile, and/or auditory tools to access textbooks, workbooks, assigned novels, and other printed information generally used in the classroom, including information presented on chalkboards or whiteboards
- **Section II**: **Accessing Electronic Information**, which covers how the student uses visual, tactile, and/or auditory tools to obtain information from electronic means, such as computers, electronic dictionaries and similar devices, digital books, and electronic braille devices
- **Section III**: **Communication through Writing**, which includes manuscript (print) and cursive writing, braille writing, and the use of electronic writing tools

http://www.afb.org/assistivetechnology/book.asp?ch=appD

Switch Accessible High tech


Enabling Devices

3/3/16

Switch Accessible Apps for iPad*

First you need to have a way to connect your switches to the iPad.
Enabling Devices has three different options:

#1166 iPad Wireless Switch Interface | #1164 iPad Wireless Switch | #1167 iPad Wireless Two Switch

Educational Apps

App	Vendor	Price	App Description	Switch	Features/Skills
A Leader Is	Marblesoft	Free	Story for early readers which teaches about leaders in our community and country. Various activities include reading the story, bingo, vocabulary and concentration.	One to three switches Auto and 2-switch step scanning	• Story reading, prompting & reinforcement • Customize for low vision, scan prompts, auditory reinforcement

*This chart contains a sampling of switch accessible educational apps. It does not list every app available. New apps are developed every day. No warranty is made about the accuracy or completeness of the information on this chart. Customers should consult the iTunes Store for detailed information about the apps. Switch accessible AAC apps are not included in this chart.

800-832-8697 ©2016 / Enabling Devices - Educational Apps Chart, Part I www.enablingdevices.com Page 1

enablingdevices.com/wp content/uploads/2017/04/SwitchAccessibleApps.pdf

https://www.rehabmart.com/vendor/ablenet.htm

Selecting Vocabulary

Vocabulary Selection

Early Communicatorsrely on vocabulary provided by OTHERS (caregivers, service providers, teachers, etc.)

- Vocabulary Selection is an ongoing processthat considers
  - Age
  - Gender
  - Interests
  - Communication partners
  - Environments
  - Communication/Literacy/Cognition levels

(Beukelman & Mirenda, 1998)

"I don't have the slightest idea where to even begin!"

If the process of selecting vocabulary seems overwhelming to you, it will likely be overwhelming to the student as well. Start small, think simple.

Always begin with the Student and what he/she knows and likes.

Vocabulary Selection

"Beginning communicators talk on their own topic first." (Burkhart, Costello, 2008)

Considerations for the VI Early Communicator:

- Include messages centered around hands on, "touchable" topics
- Target intense and/or restricted interests

Vocabulary Selection

"Even before a child actually understands the true meaning of a word, the routine provides a structure for using language -in any of its forms." --Linda Hagood

Considerations for the VI Early Communicator:

•Which messages can be built into existing activity routines?

•What has the most potential for initiation and frequent use?

(Musselwhite & St. Louis, 1988)

Vocabulary Selection

*"The majority of studies looking at use of tangible symbol systems with children with VI/Multiple Disabilities have focused on teaching requesting only" (*Roche et al., 2014)

Considerations for the VI Early Communicator:

•What purposes for communicating will help a student build social interactions, not chains of behavior?

Vocabulary Selection

Include a range of functions/reasons for communicating (Burkhart)

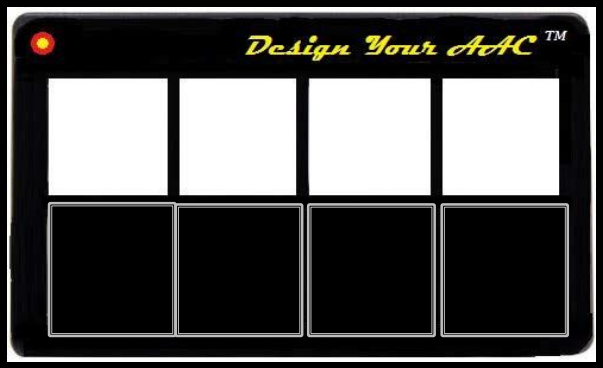
- initiate or call attention
- greet
- accept
- reject
- protest
- request objects
- share and show objects
- request information
- name
- acknowledge
- answer
- comment on action/object
- express feelings
- assert independence
- ask questions
- share information
- relate events
- call attention to how things are related similar and different
- talk about past and future
- negotiate and bargain
- state opinions
- tease
- threaten
- make up stories
- express manners and consideration for others

Organizing Vocabulary

"The purpose of a communication display is to arrange language in space so individuals can, by selecting from the available options, say what they wish to say as quickly as possible, and can do so with a minimal amount of effort."

(Blackstone, 1993)

Don't limit the number of cells on a device;
Limit the number of cells used in the array



Approaches to AAC Design

- Universal Design for Learning
- Adaptations to meet the individual access needs of the student
- Adaptations to **symbols**
- Adaptations to **systems/devices**
- Can be "customized" or pre--made to fit

Must be deliberate and based on data

Physical Challenges

May impact:

- visual access oculo motor and head/neck control
- tactile access hand use and tactile discrimination

Approaches:

- Collaborate with OT, PT
- Adaptations to materials and placement

Visual Adaptations for LowVision

CONTRAST
CONTRAST
CONTRAST
CONTRAST

Color

Positioning for visual fields

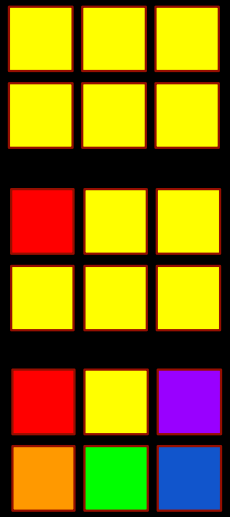
Size

DISTANCE

Support visual adaptations with tactile component

Color Considerations

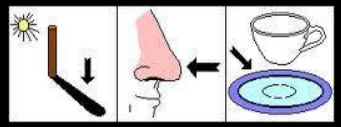
- Contrast / bright colors
- AVOID Pastels: difficult for CVI, optic nerve atrophy, optic nerve hypoplasia
- Vary the position of colors, use colors to stand out



(Kreuzer & King, 2004;; Kreuzer, 2007)

Visual components must also be **conceptually** appropriate

- Based on communication assessment
- Collaboration with team/SLP



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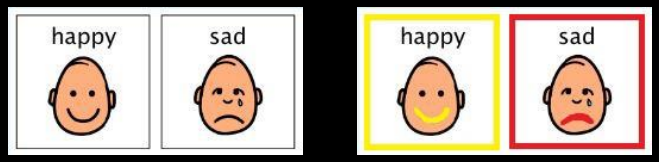
Line drawings are very abstract!

Considerations for Picture Symbols

- Focus on the CRITICAL COMPONENT
  - *Salient* feature what specific part of the symbol gives it unique meaning?



How can you bring the student's attention to the critical component?

(Bent & Buckley, 2013)

Tactile Adaptations to Symbols

What is your student's experience with what the symbol refers to (the *referent*)

Tactile quality -does it *feel* like what it represents?
- Concrete or Abstract (level of *iconicity*)
- How to tactilely represent something abstract?

Pick *salient* features -and don't overdo it!
- tactile clutter, spacing, point of reference

Maximize use of residual vision

Colored Keyguard
http://www.laseredpics.biz

Color adaptation with tactile component

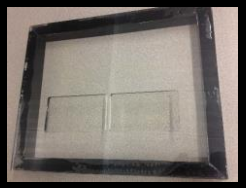
Beware of glare!

Keyguards & overlays for specific devices

- pre made or hand crafted?
- For specific applications?

Consider:

- color/contrast
- spacing and size
- tactile skills needed
- Interchangeability
- *Additional customization?*



Commercially Available Tactile Overlays & Keyguards

ProLoQuo2Go
Keyguard
www.laseredpic.biz

SpeedDots.com

TacType.com iPad
keyguard

Presentation and Interaction Strategies for Implementation of Student--Centered AAC

"Which AAC technique is 'best' for a given individual depends on: the learning/developmental priorities for the person; the person's existing skills and abilities; the person's and family's preferences; the person's current and future communication needs; and the environments in which and the people with whom the person is likely to interact." -Mirenda, 2005

Environments that encourage communication

are:

- Consistent
- Predictable
- Motivating /Child centered

…in routines that allow for:

- Anticipation
- Practice
- Success
- Fun and social exchanges!

Characteristics of Communication Partners

Available
- Proximity (visual, tactile)
  - constant contact, touch cues

Observant

Responsive…

Responsive communication partners

Responsiveness is the ability to…
- *Recognize*
- *Interpret*
- *Respond Appropriately*

…to a partner's communication initiations and responses

(Bruce & Vargas, 2007; Brady & Bashinki, 2008)

Responding "Appropriately"

Means using a variety of strategies including:

- shared forms of communication
- non--intrusive hand use and interaction
- scaffolding communication and prompting

(Bruce, 2003; Miles & Riggio, 1999; Miles, 2003)

Shared Forms of Communication

How do the forms we use with students match their:

Sensory Accessand Preferred Learning Channels:

Vision, Hearing, Tactile

Receptive and Expressive

Levels and Skills

We must use a variety of concrete and abstract forms of communication with children.

As teachers we typically instruct instead of interacting.

Giving directives and prompts

- *What other ways are there to teach?*

Remember to use **MULTIPLE MODES!**

"In addition to technology, …early communication programs may be maximally effective when participants are taught to combine technology with unaided communication responses."

Brady & Bashinski, 2008

Building correspondence between **AAC forms** and **the messages they represent** within interactions is a balancing act.

- Direct instruction of AAC
- Experience--based use, in context
- Direct facilitated tactile access to topics

What are the student's hands *on*?

- A device?
- The activity or topic of conversation?
- A partner?

Hand Use and AAC

- Exploring and accessing communication modes
- Modeling and teaching use of a system
- Engaging in and sustaining a conversation or interaction
  - Touch cues and tactile confirmation
  - constant contact
- Facilitating access to topics of conversation (objects, activities, processes and social experiences)

Processing ("wait") time

"One or two minutes sounds like a relatively short period of time, but when you are waiting for a child to act on a request, it can seem like an eternity."

Belote, 2005

Processing ("wait") time and AAC

What are you waiting for?

- Student to initiate/send a message
- Student to receive a message and respond
  - Motor response
  - Cognitive processing

How much time should I wait?

Processing ("wait") time

- Pace of interaction
  - Wait time different for different AAC modes?
  - Familiarity with routine and activity

Prompt level and scaffolding

- wait time will change (fatigue, stress, arousal level)

(Engleman, Griffin, & Wheeler, 1998; Johnson & Parker, 2013; Miles & Riggio, 1999)

Modeling and AAC

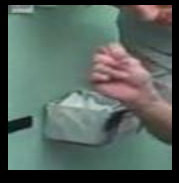
Modeling can be tactile, visual, auditory, or a combination

- Supplementing communication routines by modeling topics of reference
- Exposure to how a device can be used
- Navigating the device
- Modeling secondary/multiple modes
- Modeling social routines and responses

Prompt fading and scaffolding

- Guided participation
  - Allows for shared experience, conversation, direct instruction

- Identify appropriate prompt levels
  - support success and increased independence/interdependence
  - Start where the student is, not under or too far over! (ZPD)



Prompt Hierarchy

Least Intrusive

Most Intrusive

- Wait for response
- Gesture, pointing (finger, flashlight, auditory cue to localize/tapping, hand under hand pointing)
- Verbal or tactile (signed) prompt, touch cue
  - Note levels of VP
- Visual modeling, hand under hand modeling
- Hand under hand instruction
- Hand over hand instruction / coactive shaping

Functional Implementation of Student--Centered AAC Across Routines

The goal of communication intervention

is for the student to increase:

- Levels of communication
- Functions of communication
- Rate of communication
- Number of different routines
- Number of communication partners

Individualized Approaches

Students with Complex Communication Needs:

- Often have a *respondent* role (few initiations) compared to partners who speak

(Culp, 1982; Harris, 1982; Light, Collier, and Parnes, 1985)

- Have unequal turn--taking patterns, with the natural speaker taking the majority of turns

(Farrier, Yorkston, Marriner, & Buekelman, 1985; Light, et al., 1985)

Individualized Approaches

For students in self--contained classrooms…

Instructional time is frequently lost to other activities such as repairing technology, moving in and between classrooms, toileting, eating, and attending therapies.

(Koppenhaver & Yoder, 1993)

See handout "Suggestions…"(Mogan, 2014), creative ideas for individualized approaches to implementing AAC in classroom activities and routines!

Individualized Approaches

- Use ***collections*** as a concrete way to start a topic with peers or unfamiliar partners (Musselwhite, 2006)
- Pair the objects with pre loaded messages on single message or sequencing device

A student in a plastic molded chair reaching out to touch the bracelet/topic of a student seated in a wheelchair

Individualized Approaches

Collection Scripts
(Musselwhite, 2006)

"Hey check out my bracelet!"
[Pair message with the student extending their bracelet arm toward a partner]

Big Mack AAC device

Hey there.
Did you see my bracelet?!
It makes a cool sound when I shake my arm.
Do you want to feel it?
Talk to you later!

Step By Step Sequencing Device

Individualized Approaches

Sharing Experiences using AAC

Describe student s favorite parts about an activity or experience using

- flip book with symbols and accompanying print messages
- a sequencing device with a single topic symbol
- Pictello app or Sounding Board app on iPad

Pictello™ app from Assistiveware®

SoundingBoard™ app by AbleNet®

Individualized Approaches

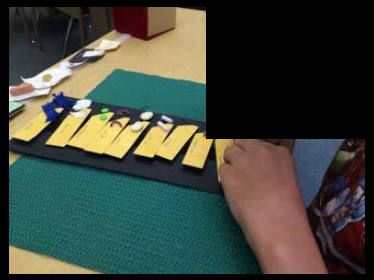
Shared Reading

Use a Single Message System to

- Repeat a line of a preferred story
- Make a silly, recurring sound effect
- Request the reader makes a motivating action or change in reading style (e.g. Can you read it with a scary voice?)

Tip: Invite guest readers fromother classrooms (Same age peers), office or custodial staff, family members, etc. This builds a student's interactions with different partners.

Individualized Approaches



Sequence a series of calls and/or responses for a preferred song or chant

- Frere Jaques tune
- Going on a Bear Hunt
- Down by the Bay
- "Oldies" songs for older students

Individualized Approaches

Embed vocabulary and concepts within motivating, repetitive interactions with classmates

- Use attribute vocabulary (e.g. hot, little, bad, boring, etc.) to lead a game of *Guess the Opposite*
- Use phrases of rejection (e.g. no way, nope, I don't think so…. etc.) to respond to 20 Silly Questions from peers

Individualized Approaches

Embed vocabulary and concepts within motivating, repetitive interactions with classmates

- Use sequencing vocabulary (e.g. And then…. Next….Followed by… as student leads others in a daily calendar read aloud
- Use action vocabulary to direct classmates in performing or singing routine songs (e.g. Hum it. Snap the song Whisper

"Next….PE." "Then….Cooking!"

Individualized Approaches

Play with voice output

- Sound Effects
- Babbling (Burkhart)
- Use a sequencer to load multiple messages representing the same language function Cool, Love it! No way Awesome…
- Build in time for access to exploration

Task Analysis: Planning Prompt Levels

Standard Routine / Step	Individual Steps	Level of prompt, additional accommodations
Morning Circle: 1) Say good morning to peers 2)…. 3)….	1) A. Recognize that it is my turn to say "Good Morning B. Locate peer(s) individually C. Locate 2 cell VOCA device D. Locate tactile/visually adapted label for "Good Morning E. Press switch to activate VOCA	***Scaffolded:*** Wait time 5-10 seconds; Light touch cue on forearm to indicate turn, paired with light VP to identify; gestural prompt toward peer(s) and light VP; VP "which one?" point to each label on VOCA; more descriptive VP paired with hand under hand for this side says good morning"/describe distinct tactile component; hand under hand tactile modeling press switch

Ongoing Assessment: AAC System

Ongoing assessment is not the same as starting over:

"It is a matter of keeping decision guiding information accurate, up to date, and clearly inclusive of the shared knowledge of all involved !" JoyZabala

- Communication Matrix: expressive, level toward symbolism
- Rate assessment (rate of Intentional Communication Acts / minute/activity)

Self--Assessment: Implementation

ClassroomObservation Instrument (Taylor, Stremel, & Steele, 2006)

COMMUNICATION				
Achieved	Nearly Achieved	Making Progress	Non-existent	Not Applicable

(17) **Access to Communication:** Student has *frequent* opportunities to communicate in all environments.	Student has *some* opportunities to communicate in all environments.
Student has *few* opportunities to communicate in all environments.	Student has *no* opportunities to communicate in all environments.

https://nationaldb.org/library/page/534

(18) **Communication Functions:** The learning environment *consistently reflects* a *balance and variety* of **communication functions** (e.g., access, request, label, offer, protest).	The lemnin l m. Ym) IIIMIII «canon n,Jl«IB a balana,a1111 Wlri•ty of ca-llllicatiaa timdioas (e.a;,.access.mqaest. laIJel offer. protest)
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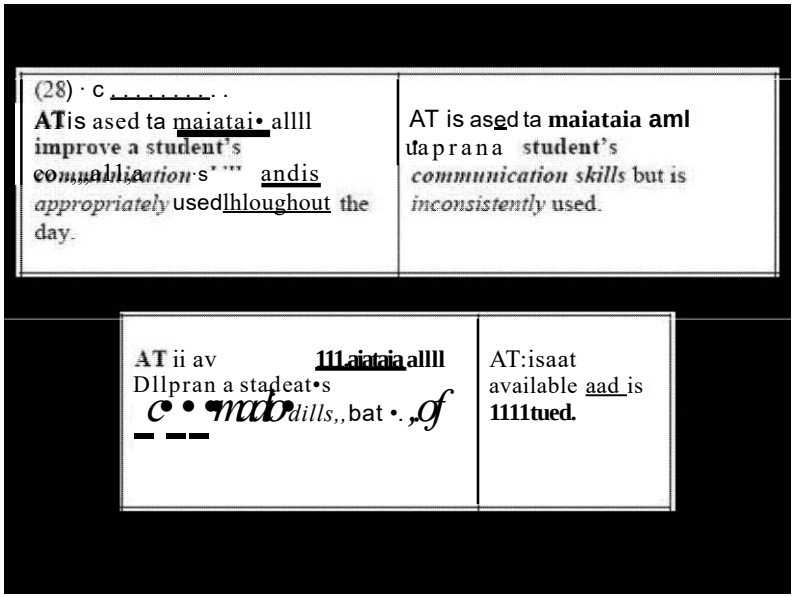
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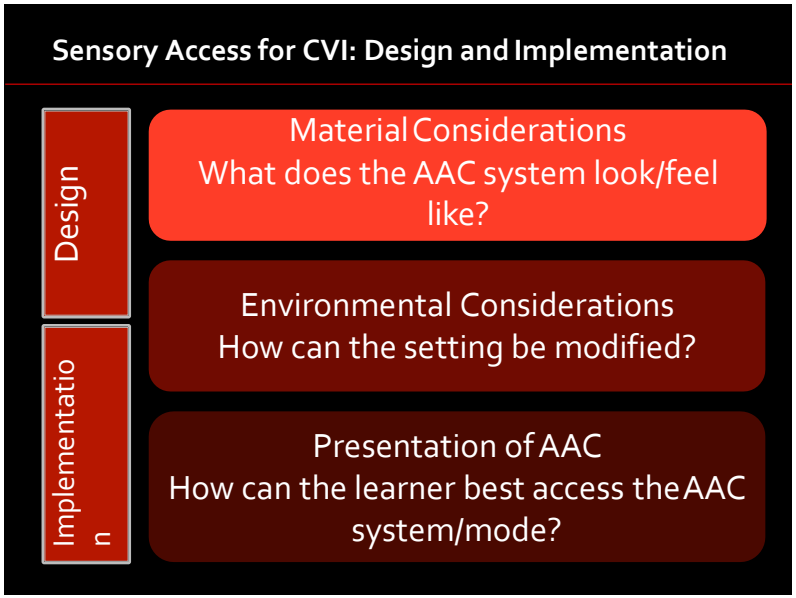
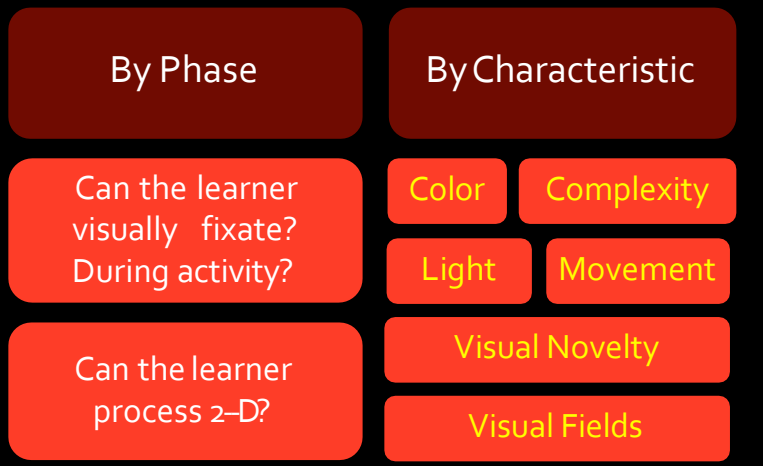

Sensory Access for CVI: Design and Implementation
Design
Implementation
Material Considerations
What does the AAC system look/feel like?
Environmental Considerations
How can the setting be modified?
Presentation of AAC
How can the learner best access the AAC system/mode?

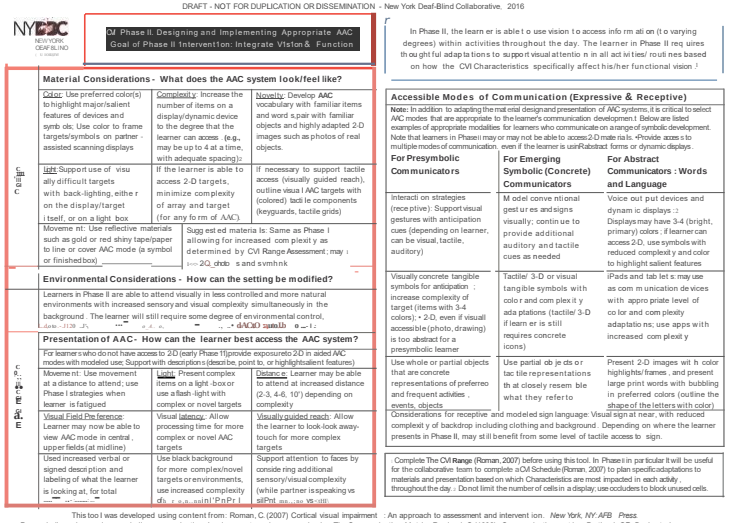
Material Considerations for Design



Presentation and CVI

- Allow time for visual processing / latency!
- Use movement to gain attention
- Color design and presentation
- Consider complexity of array and environment
- Present in accessible visual fields
- Use light to draw attention, decrease latency
- Consider the distance of presentation
- Consider access via visually guided reach
- Consider the impact of novelty

(Roman, 2007)



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NYDBC NEW YORK DEAF-BLIND COLLABORATIVE

CVI Phase II: Designing and Implementing Appropriate AAC
Goal of Phase II Intervention: Integrate Vision & Function

In Phase II, the learner is able to use vision to access information on activities throughout the day. The learner in Phase II requires thoughtful adaptations to support visual attention in all activities/ routines based on how the CVI Characteristics specifically affect his/her functional vision.

Material Considerations - What does the AAC system look/feel like?

Color: Use preferred color(s) to highlight major/salient features of devices and symbols; Use color to frame targets/symbols on partner-assisted scanning displays	Complexity: Increase the number of items on a display/dynamic device to the degree that the learner can access (e.g., may be up to 4 at a time, with adequate spacing);	Novelty: Develop AAC vocabulary with familiar items and word s,pair with familiar objects and highly adapted 2-D images such as photos of real objects.
Light: Support use of visually difficult targets with back-lighting, either on the display/target itself, or on a light box	If the learner is able to access 2-D targets, minimize complexity of array and target (for any form of AAC).	If necessary to support tactile access (visually guided reach), outline visual AAC targets with (colored) tactile components (keyguards, tactile grids)
Movement: Use reflective materials such as gold or red shiny tape/paper to line or cover AAC mode (a symbol or finished box)	Suggested materials: Same as Phase I allowing for increased complexity as determined by CVI Range Assessment; may use 2D photos and symbols	

Environmental Considerations - How can the setting be modified?

Learners in Phase II are able to attend visually in less controlled and more natural environments with increased sensory and visual complexity simultaneously in the background. The learner will still require some degree of environmental control,

Presentation of AAC - How can the learner best access the AAC system?

For learners who do not have access to 2-D (early Phase I1)provide exposure to 2-D in aided AAC modes with modeled use; Support with descriptions (describe, point to, or highlight salient features)

Movement: Use movement at a distance to attend; use Phase I strategies when learner is fatigued	Light: Present complex items on a light-box or use a flash-light with complex or novel targets	Distance: Learner may be able to attend at increased distance (2-3, 4-6, 10') depending on complexity
Visual Field Preference: Learner may now be able to view AAC mode in central, upper fields (at midline)	Visual latency: Allow processing time for more complex or novel AAC targets	Visually guided reach: Allow the learner to look-look away-touch for more complex targets
Used increased verbal or signed description and labeling of what the learner is looking at, for total	Use black background for more complex/novel targets or environments, use increased complexity	Support attention to faces by considering additional sensory/visual complexity (while partner is speaking vs still/Pause)

Accessible Modes of Communication (Expressive & Receptive)

Note: In addition to adapting the material design and presentation of AAC systems, it is critical to select AAC modes that are appropriate to the learner's communication development. Below are listed examples of appropriate modalities for learners who communicate on a range of symbolic development. Note that learners in Phase I may or may not be able to access 2-D materials. Provide access to multiple modes of communication, even if the learner is using Rabistract forms or dynamic displays.

For Presymbolic Communicators	For Emerging Symbolic (Concrete) Communicators	For Abstract Communicators : Words and Language
Interaction strategies (receptive): Support visual gestures with anticipation cues (depending on learner, can be visual, tactile, auditory)	Model conventional gestures and signs visually; continue to provide additional auditory and tactile cues as needed	Voice output devices and dynamic displays : Displays may have 3-4 (bright, primary) colors ; if learner can access 2-D, use symbols with reduced complexity and color to highlight salient features
Visually concrete tangible symbols for anticipation : increase complexity of target (items with 3-4 colors) • 2-D, even if visually accessible (photo, drawing) is too abstract for a presymbolic learner	Tactile/ 3-D or visual tangible symbols with color and complexity adaptations (tactile/ 3-D if learner is still requires concrete icons)	iPads and tablets may use as communication devices with appropriate level of color and complexity adaptations; use apps with increased complexity
Use whole or partial objects that are concrete representations of preferred and frequent activities , events, objects	Use partial objects or tactile representations that closely resemble what they refer to	Present 2-D images with high highlights/ frames , and present large print words with bubbling in preferred colors (outline the shape of the letters with color)

Considerations for receptive and modeled sign language: Visual sign at near, with reduced complexity of backdrop including clothing and background. Depending on where the learner presents in Phase II, may still benefit from some level of tactile access to sign.

Complete The CVI Range (Roman, 2007) before using this tool. In Phase I in particular it will be useful for the collaborative team to complete a CVI Schedule (Roman, 2007) to plan specific adaptations to materials and presentation based on which Characteristics are most impacted in each activity throughout the day. Do not limit the number of cells in a display; use occluders to block unused cells.

This tool was developed using content from: Roman, C (2007) Cortical visual impairment: An approach to assessment and intervention. *New York, NY: AFB Press.*
Presymbolic and emerging symbolic communication development can be assessed using *The Communication Matrix*: Rowland, C (1996). Communication matrix. *Portland, OR: Design to Learn.*

Additional Resources:

- http://praacticalaac.org/
- http://www.pathstoliteracy.org/technology students multiple disabilities
- http://www.asha.org/NJC/AAC/
- Webinars (See Perkins AAC Part 1 & 2): http://nydbc.org/webinar recordings/
- http://www.bridgeschool.org/transition/multimodal/
- Types of AAC: http://www.rockybay.org.au/wp content/uploads/2013/04/1.4 Types of AAC.pdf
- http://www.assistiveware.com/dos and donts aac multi modal communication
- National Center on Deaf Blindness library: nationaldb.org
- Classroom Observation Instrument: https://nationaldb.org/library/page/534

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Questions?