Alternative Access
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About Me:
• In the beginning...Interpreter for the Deaf
• Andrew Early Intervention
• St. Joseph's College, Adelphi University
• Agency work
• CP Nassau
• Molloy College
• Now for today's topic...

First...What is AAC?
Second...What is Alternative Access?
- Many individuals with Complex Communication Needs (CCN) also present with physical impairments
- Movement challenges can make direct selection extremely difficult or impossible
- Devices and technologies used to support access needs of individuals with severe physical impairments

4 Areas of Learning in AAC
<table>
<thead>
<tr>
<th>Operational</th>
<th>Linguistic</th>
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<tbody>
<tr>
<td>Social</td>
<td>Strategic</td>
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Why is access so important?
There are many barriers that our AAC users must overcome to be competent communicators...an inappropriate access recommendation should not be one of them...
Selection Set

- Selection set of an AAC system includes the visual, auditory, or tactile presentation of all messages, symbols, and codes that are available at one time to a person who uses AAC.
- Computer displays
- Visual displays
- Auditory/Tactile displays

Types of Selection Set Displays

- Fixed
- Dynamic
- Hybrid
- Visual Scene

Physical Consideration of Displays

- Number of items
- Size of items
- Spacing of items
- Orientation of Display
For Example:
- Direct selection is possible with 8 symbols per page, no smaller than 2” in size
- 24 months vocabulary can be ~300 words
- Weigh the complexity of navigation
- Think about as language develops

<table>
<thead>
<tr>
<th>Selection Techniques</th>
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<tbody>
<tr>
<td><strong>Direct Selection</strong></td>
<td><strong>Scanning</strong></td>
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<tr>
<td>- Physical contact</td>
<td>- Circular</td>
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<tr>
<td>- Physical Pressure</td>
<td>- Linear</td>
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<tr>
<td>- No contact pointing</td>
<td>- Group-item</td>
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Physical Considerations of individuals with CCN: Positioning/Seating
- Individuals who have increased/decreased muscle tone
- Efficient use of AAC will require external support or environmental adaptations to compensate
- Consider reflexes
- Scoliosis – motor experts on the AAC team will need to compensate
- Athetosis – uncontrolled movements
Principles and Techniques

- It is easy to underestimate an individual's capabilities if he/she is not properly seated and supported.
- Improper seating and inadequate support can result in fatigue and discomfort. Emotional state, attention as well as ability to move may be compromised.

FIRST STEP IN ASSESSMENT IS OPTIMIZING POSITIONING

- Use yourself as a reference
- Ensure stable base of support
- Decrease the influence of atypical muscle tone
- Accommodate deformities
- Provide least amount of intervention to achieve greatest level of function
- Provide support for resting

Assess Motor Capabilities

- Identify a gestural y/n response for assessment/back-up and identify alternative access for long term
- Discover motor capabilities, do not describe motor problems
  - Short Term techniques
    - Can the individual answer y/n questions accurately? If reliably "yes" there is your short term direct selection technique...
    - If not highly accurate and unambiguous then assess hand
    - If not then assess eye gaze
    - ALLOW ADEQUATE TIME – IT FEELS TO LONG TO US – WAIT!!!
Long Term Motor Skills
• Minimize cognitive, linguistic and technical demands so that motor control can be assessed in isolation
• Direct selection
  • Hand/arm
  • Head/orofacial control
  • Foot/leg
• Provided temporary manual supports
• Optimize control
  • Accuracy
  • Maximum range and number of targets
  • Adaptations
• Assess negative impact

Switch Assessment for Scanning
• Again minimize the cognitive, visual and communication demands consider using a switch activated toy, or a simple computer game.
• Hands, head, feet, legs and knees

Switch Assessment for Scanning
• 6 components
  • Wait
  • Activation
  • Hold
  • Release
  • Waiting
  • Reactivating
Scanning

• Directed Scanning – cursor moves as long as switch is activated
• Automatic Scanning – activate switch to start scan pattern, hit switch again to select
• Step Scanning – one to one correspondence

Types of Switches

• Buttons
• Wobble
• Wireless Bluetooth/Radio Frequency
• Sip/Puff
• Proximity
• String
• Grasp
• Twitch

Feedback

• Activation - Let's the individual know an item has been selected
• Message – Provides the individual with information about the message that has been formulated
Any questions??

Eye Gaze

- No contact direct selection method
- Technology that uses a camera and an IR light source to illuminate the eyes and then the reflections on the cornea are used as a reference for eye gaze and eye movements

Consider: Eye Disorders

- Cataracts
- Ptosis
- Nystagmus
- Strabismus
- CVI
- Mydriasis
Story to Share…

• It all started with the question:
• Do you know how to calibrate an eye gaze?

Head-Tracking

• No contact direct selection method
• Camera mounted on device which also uses IR technology to detect a reflective dot worn by the user
• Translates the users movements into cursor movements

Any questions??
Thank you for your time and attention!!
## References


[https://pubs.asha.org](https://pubs.asha.org)