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FIRST STEPS WITH COMPLEX COMMUNICATION NEEDS

WHO WE ARE…

- Speech-Language Pathologists at United Ability
- Career focus of working with individuals with complex communication needs
- Experience in a variety of settings, public schools, preschool, early intervention and outpatient
- Main approach of caregiver and educator training during therapy
- Always learning, with a deep desire of practicality that benefits the user, family, and the educator

OBJECTIVES/DESCRIPTION

Description: Discuss practical treatment strategies for individuals with Complex Communication needs. Will include the basics of positioning, early forms of access for communication and play, and considerations for sensory needs.

Objectives:
Identify basic positioning strategies
List the forms of access and consider them when working with their client population
Describe sensory based challenges and practical adaptations for communication and learning

ACCESS METHODS

- Access is the method by which an AAC user is able to utilize the alternative means of communication. There are two different types of access.
  - Direct Selection
    - Touch Access
    - Eye Gaze/Head Pointing
  - Indirect Selection/Scanning

DIRECT SELECTION

Access to a communication system by selecting the exact word or message that is desired by the user.

TOUCH ACCESS

- Touch Access can be with…
  - Any finger or thumb desired
  - one hand or bilaterally
  - Using thumbs to access and hands to stabilize
  - the middle finger or two fingers
  - a foot or toes
- It's important to remember that there is no ONE correct way to access. The easiest, most efficient and effective way for that user is the BEST way.

EYEGAZE/HEAD POINTING

- Head Pointing
  - Direct selection method that uses an reflective dot and tracking system to access vocabulary
  - Older technology but can be a solid option for certain users
  - Requires good head, neck, and trunk control for accuracy
- EyeGaze
  - Direct selection method that uses an eye movement tracking mechanism that detects eye movement and dwell time on an icon, word, or message
  - Newer technology that is constantly changing in quality and accuracy and is more sensitive to movement than Head Pointing
  - Requires less head, neck and trunk control, but better motor strength leads to better accuracy

INDIRECT SELECTION/SCANNING

- Scanning is where the items in the selection set are presented sequentially over time and the user makes a selection indirectly, typically via one or two switches.
  - There are different types of scanning which allow a user to receive the words to be selected to make scanning faster. You might hear terms such as row/column, block, or CoreScanner.
  - Scanning is SLOW and laborious for both the user and the communication partner, but for many it's the only option to communicate.
  - Due to technology advances, scanning is the choice of communication for individuals with both visual and severe physical impairments

POSITIONING

- Typical bodies naturally support communication.
  - Head/neck control
  - Truck/core for sitting and phonation
  - Limbs contribute to stability and balance while sitting and standing

POSITIONING

By giving the body the support and stability, it needs, we remove an enormous barrier to access for communication.

SEATING

Proper seating in the right chair makes all the difference!

Stability for a communicator can be achieved by…

Feet supported (floor, footplate, etc.)	Bottom all the way back to the back of the seat (seat depth)	Sides on a chair for stability	Wrap around trays or table for sensory needs or easy access	Chest support

SEATING FOR AMBULATORY INDIVIDUALS

- The "just right" chair has the user's…
  - Feet on the floor
  - Bottom all the way back in the seat (the right seat depth)
  - Reaches the table or has a tray that allows the arms to be supported
  - Has a back and sides that are comfortable and supportive

COMMERCIALLY AVAILABLE SUPPORTIVE SEATING

- Good for individuals who need supportive seating but do not have prescriptive seating yet.
- Often great as a seating alternative at a restaurant, grandparent's house, babysitter or in the home.
- Can be used at dinner table or floor
- Great options for school or clinic
- Affordable, look typical, easily replicated
- Promote success for communication and access to learning environment

ALTERNATIVE SEATING…NOT ALWAYS A GOOD THING.

- Alternative seating is fun and provides a sensory and movement outlet while learning. It's fantastic for individuals with typical bodies.
- For individuals with physical differences, alternative seating can actually be a barrier.
- Stools-no back support
- Balls-no stability
- Floor sitting-no back support, stability or a secure workspace.
- For individuals with complex bodies, sensory input or physical activity prior to sitting for academic or communication activities would be the best choice.

SEATING FOR NON-AMBULATORY INDIVIDUALS

- The right wheelchair provides a complex communicator with the following…
  - A stable place for the feet (footplates, straps, shoe holders, etc.)
  - A secure, comfortable place to sit with the correct seat depth (knees shouldn't have space between seat and edge)
  - Back support
  - Lateral trunk support for stability and sensory needs
  - Head and neck support (the right headrest at the correct angle)
  - A way to bring arms into a midline position and secure them at rest (usually a tray)

READINESS TO LEARN

Readiness to learn refers to the individual being at a state to receive optimal benefit from the learning experience.

This is the foundation of unlocking our most complex communicators

Halloran, J., & Halloran, C. (2006). *LAMP: Language Acquisition through Motor Planning AAC Strategies for Promoting the Development of Communication for Individuals with Autism Spectrum Disorder.* Wooster, OH: The Center for AAC and Autism.

READINESS TO LEARN

- Sensory Processing Differences
- Arousal/Modulation
- Motivation
- Emotion
- Task Consideration

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READINESS TO LEARN: SENSORY PROCESSING DIFFERENCES

- Sensory processing differences can affect behavior
- When your client over-responds to sensations (hyper-responsive)-might have difficulty filtering unnecessary input. INPUT NEEDS TO BE LESSENED
  - Easily distracted
  - Avoidance of certain sensations
  - May appear resistant
- When your client under-responds to sensations (hypo-responsive)-might be "sensory-seeking". INPUT NEEDS TO BE INCREASED
  - May wiggle, constantly move, climb, chew on clothing, crash into things

READINESS TO LEARN: AROUSAL AND MODULATION

- Arousal level-activation of a person's nervous system
- Modulation is the nervous system's ability to balance sensory information coming from all sources to maintain a moderate level of arousal.
- Arousal and modulation must be at a moderate level to orient, discriminate, attend, explore, interact, and learn
- Our learners may need enhanced sensory input to increase their arousal level or need modifications to activity/environment to dampen arousal level

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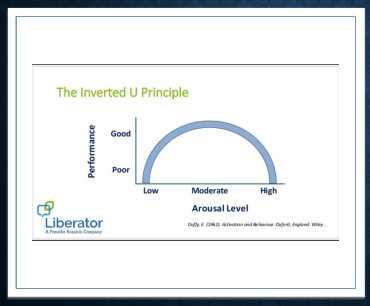

DUFFY, E (1962). ACTIVATION AND BEHAVIOR. OXFORD, ENGLAND. WILEY
HALLORAN, J., & HALLORAN, C. (2006). LAMP: LANGUAGE ACQUISITION THROUGH MOTOR PLANNING AAC STRATEGIES FOR PROMOTING THE DEVELOPMENT OF COMMUNICATION FOR INDIVIDUALS WITH AUTISM SPECTRUM DISORDER. WOOSTER, OH: THE CENTER FOR AAC AND AUTISM.

PRACTICAL STRATEGIES

- Be aware of unique sensory differences. Understanding and respecting sensory needs leads to increased trust and willingness to cooperate.
- Become a keen observer of behavior. Read cues from their body to determine state of arousal and modulation.
- Determine if you need calming or alerting sensory stimuli to maintain optimal arousal.
- Provide individually designed mini-breaks: a bite to eat, short music break, get up and move
- Watch your interaction: voice volume, speed of movement, excessive talking, light touch, tickling, loud activities, too much activity (REGULATE YOURSELF FIRST)

ALERTING ACTIVITIES (UNPREDICTABLE)

- Quick, unexpected movements such as swinging, rolling, bicycling, dancing, spinning
- Loud noises, voices, or music
- High intensity, high contrast, variable visuals
- Variable, high intensity auditory input
- Oral motor activities (like eating something sour, crunchy, or bitter)
- Drinking ice cold water or a sweet drink

CALMING ACTIVITIES (PREDICTABLE)

- Slow repetitive movements like gentle swinging or rocking
- Proprioceptive activities, particularly resistive "heavy work" like carrying, pushing, pulling, lifting, squeezing
- Deep pressure, like brushing, massage, being wrapped
- Constant, rhythmic, low intensity auditory input
- Low intensity visual input

READINESS TO LEARN: MOTIVATION

- Motivation lends to increased effort, energy, initiation, and persistence.
- **Intrinsic**-desiring to engage in an activity that has no subsequent reward. The task itself is its own reward. (examples include requesting more swinging, directing the therapist to act silly, or making a funny comment in which others laugh).
- **Extrinsic** motivation -task itself is not rewarding but the participating in or completing the task leads to a desired reward (sitting still in class to get a sticker or reading a boring book to get a good grade).

Halloran, J., & Halloran, C. (2006). *LAMP: Language Acquisition through Motor Planning AAC Strategies for Promoting the Development of Communication for Individuals with Autism Spectrum Disorder*. Wooster, OH:
The Center for AAC and Autism.

READINESS TO LEARN: TASK CONSIDERATION

- We must present what Ayres described as the "just right challenge" (Ayres, 1983)
- Alter the sensory environment if needed so that the person can attend and process the information
- Present an activity that is challenging enough to enhance skills, but not so difficult that some success is not experienced
- Provide an activity that is valued by my client for there to be an incentive to achieve the goal

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- Constantly making demands on a non-engaged learner leads to frustration for both participants.

PRACTICAL STRATEGIES

- If you sense you are forcing participation, then the activity is not motivating.
- Add interesting twists to activity for the novelty factor (toy on head, pretending to drink bubbles, wear light up glasses)
- Be attentive to the learner's body language, expressions, gaze for communication. Watch for what they want to say and give them a way to say it!
- Use sabotage cautiously. Do not make an activity harder than usual but give the learner the vocabulary needed to access a favorite activity.

READINESS TO LEARN: EMOTION

- Adding a positive emotional component to the teaching activity will increase the likelihood that skills will be learned.
- This assumption of potential changes the energy/emotion of the interaction to that of being positive.

ADOPTING A TEACHING VS. TESTING MENTALITY

- Being able to do something in context is different from taking a test about it. Emphasize experience.
- Focus on Instruction and Experience vs Testing.
- Assess within natural contexts, integrated within the day, collect data over time, instead of sitting down in one session.
- There is not a wasted session.

Burkhart, L. J. (2018, July 31). *Communication and Learning Strategies for Individuals with Rett Syndrome*. Lecture presented at CPEC in Australia, Melbourne.

INCORPORATING EFFECTIVE PROMPTS

- Limit or eliminate hand over hand prompting
- Provide Quiet wait time
- Model, Model, Model
- Meaningful feedback vs. praise performance
- Tactile cueing

BENEFITTING FROM MULTIPLE MODALITIES

- Recognize that communication is multimodal
- Multiple modalities could include facial expressions, vocalizations, low tech boards, auditory/visual scanning

LINDA BURKHART

- Lindaburkhart.com
- Educator with specific interest in working with those who exhibit complex communication needs

CORTICAL VISUAL IMPAIRMENT

- Dr. Christine Roman is leading specialist with CVI
- ROMAN ON CVI on YOUTUBE
- https://www.youtube.com/watch?v=kChzaAq089Y
- They have an eye exam that doesn't explain the way they see.
- History of neurologic event
- The presence of 10 characteristics of CVI
  - Color
  - Movement
  - Complexity
  - Visual field differences
  - Visual novelty
  - Reflex response
  - Latency
  - Distance Viewing
  - Light Gazing
  - Visually Directed Reach

ACTIVITIES THAT "HOOK" YOU IN

- Items that have a visual connection
- Items that have an auditory connection
- Items that have both!
- Items that have a natural ending
- Items that must be re-started by the adult

"ITEMS" VS. "TOYS"

- Don't limit yourself to toys or educational products!
  - Mini Vaccums that turn on and off
  - Paper shredders (can use with vacuum)
  - You Tube videos
  - Electric Pencil Sharpeners
  - Musical instruments
    - We LOVE small drums, bells, shakers, etc.
    - Look for real instruments and not toys (Ask your music teacher or therapist if you have access to one) since tone and pitch can often be a factor with a child.

A SOLID INVENTORY OF "TOYS THAT HOOK"

- Light Up Spinning Tops
- Wind Up toys
- Lighted spinning pinwheels
- Bubble Wands or Machines
- Ball Spinner/Drop Toys
- Car Ramps
- Noisy Shape Sorter
- "Spin Again" Toy (pictured)
- Melissa and Doug Doorbell House

CONNECTION AND COMMUNICATION

- All activities are highly preferred activities
- To begin working on transition of activities, alternate short bursts of 2 and later 3 preferred activities
- Use cues to let the user know something is about to change to ease the transition
  - A short repetitive song
  - 3…2…1…STOP

SWITCH PLAY

Research shows that 30 minutes per day is helpful for users with access challenges to form motor plans

Users with access challenges don't get to do the kind of play that promotes problem solving.

Why won't this Barbie dress fit on the baby doll	Why won't this animal go in that barn, etc.	Switch play can address some of these issues

Burkhart, L. (2018) Perspectives of the ASHA Special Interest Groups SIG 12, Vol. 3(Part 1), 2018, Copyright © 2018 American Speech-Language-Hearing Association

SWITCH PLAY

01 Switch play can be errorless learning

02 Switch play can offer high contrast rewards for those with visual needs

03 Switch play can offer a play option that might be easier than other motor demands and be incorporated into higher level work or rest periods when the access is more mastered.

SWITCH PLAY

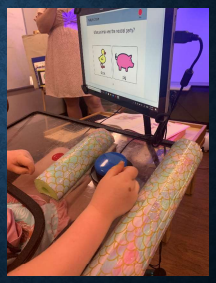
It doesn't matter if a user's modality is eye gaze or a different mode of access. Switch play is still valuable for cognitive and motor learning and creates better communication.

WHAT YOU NEED…

- Some type of computer set up (laptop, PC, smartboard, etc.). We use a smartboard.
  - Suggestions for home set up: a cheap flat screen TV 40" or more mounted at eye level and some type of computer hooked to it.
  - Some families additionally mount an iPad at eye level with a mounting system on their chair if their vision is only good up close. https://www.rehabmart.com/product/tabgrabber-mounting-system-37136.html?gclid=CjwKCAjwh5qLBhALEiwAioodsxHEklITp9wIyAfWzts5IjRJqFY41nAahZsVRKxbJ-PosGLmAptRARoCv_0QAvD_BwE

SWITCH ACCESS

- The placement for method of access is essential.
- Should be in the easiest, most natural place of movement to ensure accuracy.
- Can be anywhere that movement is volitional, accurate, and can tolerate repetition (hand, finger, head, elbow, foot, knee, hip, etc.)
- Switches can have a variety of sensitivity and controls on the potential system can be adjusted to the best method of activation (depression, release, hold, etc.).



SWITCH PRACTICE

- For many individuals with complex communication needs, simple play is impossible. We learn through play and exploration and physical need removes this important method of learning.
- For complex communicators (regardless of selection methods for communication), switch access provides a means of play and exploration.
- Learning cause/effect is a basis of learning and for communication growth
- It takes lots of time and effort exploring various aspects of switch play to develop motor accuracy.
- If switch access declines, there may be external factors such as positioning or body changes that cause an impact and need to be addressed

Beukbert L. (2018) Perspectives of the ASHA Special Interest Groups SIG 12, Vol. 3(Part 1), 2018, Copyright © 2018 American Speech-Language-Hearing Association

DEVICE POSITIONING/MOUNTING

- The best position for a communication system is where there is the least amount of effort for the user.
- An AAC user may want a touch based system lying flat or at an angle depending on their vision or physical needs.
- EyeGaze or HeadPointing systems are position dependent and need consistent mounting that provides the same angle and effort for the user each time.
- PT's and OT's are essential in aiding selection.

ADDITIONAL MOUNTING SYSTEMS

- AAC users are positioned in a variety of ways at home. It's important to consider how to accommodate these positionings when writing a funding packet.
- Depending on your funding source, you may want to write for funding for-
  - Mounting for mobility (such as a wheelchair mount)
  - Mounting for sitting/standing/lying down (such as a floor mount or table mount)

THINGS WE LOVE-AND USE

- https://www.helpkidzlearn.com/
- We use a subscription to the games and activities, but I HIGHLY recommend another subscription to the "Ready Mades" and to "Choose it Maker" Both allow you to have curriculum-based goals accessible for switch users.
- However, most users like them. Later, you can also incorporate BoardMaker online activities or switch adapted books on TarHeel Reader.

ADD TO CART!

- https://www.ablenetinc.com/hitch-2/ **This is a switch interface for a computer** that allows the switch to become the mouse click. Doesn't work on an iPad and you may need to check for Mac capability.
- https://www.ablenetinc.com/switch-interface/hook-3rd-gen/ This is a **switch interface for iPads** that allows the switch to become the touch on the screen. Doesn't work on a PC.
- https://www.rehabmart.com/product/tabgrabber-mounting-system-37136.html?gclid=CjwKCAjwh5qLBhALEiwAioodsxHDxIlTp9wIyAIWztsSlR1qfY41nAahZaVBKxb1-PzsGLmAprRARoCy_0QAvD_BwE **This is an iPad mount that is great for a tabletop or wheelchair**
- https://www.ablenetinc.com/jelly-bean Just a good basic switch needed for access. Recommended 2 per interface.
- https://www.modularhose.com/110221 A very inexpensive, easy to use mounting system that can clamp on any table or chair. Especially helpful for those with head access needs that you are exploring.

QUESTIONS OR COMMENTS

- Thank you for listening and participating!
- There is a "Shopping List" available for you on the SHAA handout website.
- Contact us at mhankins@unitedability.org or lroebuck@unitedability.org