ASHA HANDOUT PHILADELPHIA 2016

A Picture's Worth 1,000 Words
An AAC Intervention to Increase Participation for Children with Complex Communication Needs

Poster Session Number 8293
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Introduction and Review of Literature

- Approximately one million children in the United States alone have complex communication needs (CCN) (Binger & Light, 2007)
- AAC can provide benefits related to language and social skills (Light & Drager, 2010)
- Social communication, language, and literacy skills are fundamental for participation in interactions across settings (Light & McNaughton, 2012)
- Peers often take more opportunities in communication exchanges compared to children with CCN (Light & McNaughton, 2014)

Introduction and Review of Literature

- Development of intervention programs that target necessary AAC skills as well as children's interactions with same-age peers is needed
- Development of such skills will allow children to express wants and needs, share information, and develop social relationships (Light, 1989)
- Flexibility in interventions can allow children to develop competencies across multiple skills sets
- Integration with same-age peers can promote children's language and social skills

Introduction and Review of Literature

- Programs based in arts and creative activities can offer potential for integration and skills development (McCarthy & Light, 2001)
- Current communication technologies and social networks rely on digital photos and media
- AAC devices have media capabilities to capture, integrate, and share, photos (Light & McNaughton, 2012)
- Opportunity to capitalize on technologies

Aim of the Project

- Design, implement, and evaluate an exploratory photography intervention
  - Increase communication and social participation skills for children with CCN
  - Use photography as enhancement to increase opportunities
- Identify strategies and activities to increase skills with AAC
  - Potential to address multiple competency areas

Method

- Descriptive pilot study following a single-subject design format
  - Three Baseline Probes
  - Three Intervention Sessions followed by Probes
  - Maintenance Probe
- Child with CCN paired with a peer for structured photography activity
- Activity designed to follow a short story format
- Data collected on story elements and communicative interactions
- Participants included 1 child with CCN and 2 same-age peers
  - Age 5;6

Baseline

- Pairs were seated in small classroom with primary investigator
- All materials were made available
- Pair asked to tell two stories
- Provided with a visual timer and given reminders to complete two stories
- Stable baseline was achieved in three sessions with peer independently telling stories and no interaction with child with CCN

Intervention

- Three intervention sessions were conducted followed by probes
- Sessions were approximately 30 mins each
- Instruction to scaffold the process
  - Practice flipping the coin and choosing materials
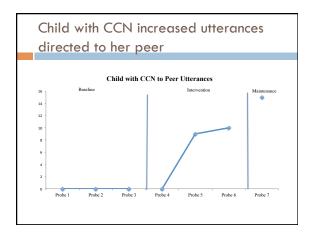 - Teaching how to tell a story with a Who, Oh No and Fix
  - Operating the camera

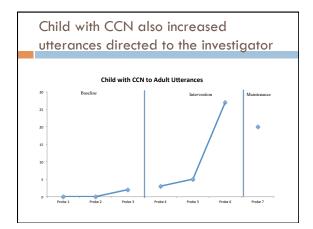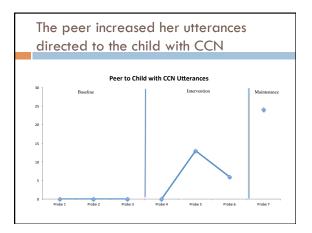Select Role ⇨ Choose Materials ⇨ Select Who ⇨ Provide "Oh no" ⇨ Fix it ⇨ Switch Roles

Main Results

- Child with CCN increased use of vocalizations and gestures directed to her peer, investigator, and self
- Peer increased utterances towards child with CCN and self
- Increased story target achievement

Child with CCN increased utterances directed to her peer

Child with CCN to Peer Utterances

Baseline | Intervention | Maintenance

Child with CCN also increased utterances directed to the investigator

Child with CCN to Adult Utterances

Baseline | Intervention | Maintenance

The peer increased her utterances directed to the child with CCN

Peer to Child with CCN Utterances

Baseline | Intervention | Maintenance

The pair obtained increased story components.

Story Elements

Discussion

- Child with CCN became more vocal and used combinations of gestures and vocalizations with peer and investigator
- Peer directed more statements and questions to child with CCN
- Structure of the activity may have allowed peer to support child with CCN
- Increased opportunities for child with CCN

Discussion

- Child with CCN had most difficulty when in storytelling role as more support was needed
- Switching roles did not occur
  - Exchanging camera after each turn could potentially be more readily understood
  - Peer spontaneously suggested this option despite intervention sessions
- Story elements were included more but complexity of peer's stories appeared to decrease

Future Directions

- Photography appears to be an engaging avenue for children
- Support for exploring options for peer and group activities for children with CCN
- Implication with additional technologies
  - Potential inclusion of AAC device camera
- Greater integration of AAC device in interactions
- Interventions with small group and classroom activities
- Exploring additional photography avenues

Extension of Photography Activities

- Additional methods of incorporating photography:
  - Scavenger hunts
    - Find a take photos according to themes
  - Snapping Selfies
    - Use a selfie stick and dress up game as a language activity
  - Incorporating additional photography tools
    - GIF generators, Filters, Sharing Features (i.e. Instagram, Tumblr, Twitter)
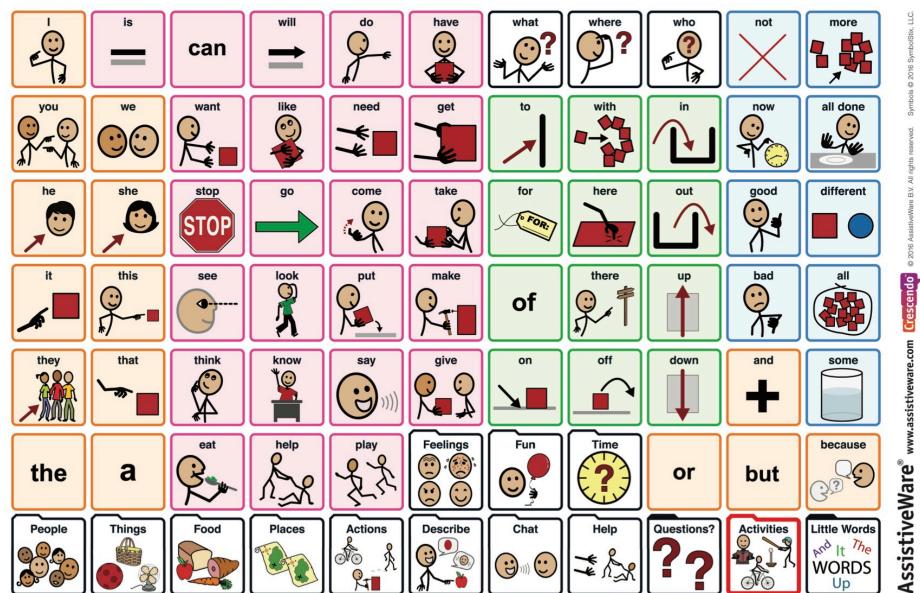
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I	is	can	will	do	have	what	where	who	not	more
you	we	want	like	need	get	to	with	in	now	all done
he	she	stop	go	come	take	for	here	out	good	different
it	this	see	look	put	make	of	there	up	bad	all
they	that	think	know	say	give	on	off	down	and	some
the	a	eat	help	play	Feelings	Fun	Time	or	but	because
People	Things	Food	Places	Actions	Describe	Chat	Help	Questions?	Activities	Little Words

Crescendo™

AssistiveWare® www.assistiveware.com

Proloquo2Go® Crescendo core word board

ASHA 2016: Everyday Leadership. Leadership Every Day

AAC Modeling Self-Assessment

Scoring Key: Frequently = 3; Sometimes = 2; Seldom = 1

Modeling involves the use of an augmentative and alternative communication (AAC) system (e.g., device, communication board/book) to provide language input for children who communicate with AAC. When communication partners (e.g., parents, teachers, therapists, paraprofessionals) talk as they're using the child's AAC system, children can better understand what is expected for language output. If the communication partners are modeling consistently, children are more likely to use their AAC system with increased effectiveness and efficiency.

You are being asked to complete the following self-assessment so you can think about how consistently you are modeling AAC. Using the Scoring Key, please rate yourself honestly as you consider how often you model the 5 strategies below. The results of the self-assessment are intended to help you identify areas of strength and growth in order to best serve children with AAC needs.

8-Step Coaching

1. Pre-test
2. Describe strategy
3. Demonstrate strategy
4. Verbally practice strategy steps
5. Practice in controlled environment
6. Practice natural environment
7. Post-test
8. Generalization

Self-Assessment How Often do I model…	Communication Functions	Ideal Goals/ Best Practice	AAC/Language Teaching Strategies
…by touching symbols while I talk?	Requesting - "I want it"	touch & talk **5x**/15min	**Aided Language Stimulation –** "touch n' talk" touch symbols (core words) while you're saying them
…followed by wait time for about 5 seconds or more?	Protesting - "you don't want that"	wait for at least **5** seconds (up to 45 seconds)	**Expansions –** add more (within ZPD) to AAC user's utterance
…one more word than the AAC user's typical utterance?	Commenting - "you like it"	use only **1** more word than child typically uses	**Recasts –** gently correct the AAC user's utterance **CAR –** comment-ask-respond during shared reading tasks
…for at least 3 different communication functions?	Asking Questions - "where is it?"	use for all **5** different communication functions	**Descriptive Teaching –** ask open ended questions that elicit responses with core words
…in at least 3 different contexts?	Sharing Information - "I am all-done"	use across **all** contexts (shared reading, play, meals, shopping, etc.)	**Wait Time –** wait approximately 5 seconds or more (up to 45 sec)

Links to Resources: Below you will find resources to assist you in successfully coaching communication partners

ALgS

- Success of student depends on modeler:
  - Video links to support
    https://www.youtube.com/watch?v=flFNMky22-U

    https://www.youtube.com/watch?v=vUY6oQoSTXw
  - Script to guide Tx lessons
    https://www.dropbox.com/s/9ayqnvkiavvmze5/AAC%20script.pages?dl=0

Coaching

- Script for teaching 8-steps to coaching:
  - Script & coaching process
    https://www.dropbox.com/s/6w584u04xawhke1/Coaching%20Parent%20to%20use%20Aided%20Language%20Stimulation%20-%20Revised.pages?dl=0
  - AAC training plan
    https://www.dropbox.com/s/uktqblpvvrnp1bt/AAC%20Training%20Plan%20-%20Jhoselle.pages?dl=0
- Documenting data:
  - Percentally Pro2 https://itunes.apple.com/us/app/percentally-pro-2/id1037705087?mt=8
- Training handouts:
  - Proloquo2go
    https://www.dropbox.com/s/gig751049zctrbm/Proloquo2Go%20Introductory%20Training.pdf?dl=0
- Following up with parents:
  - Remind https://www.remind.com/

Coaching Cont.

- Modeling AAC self-assessment:
  - Self-assessment
    https://www.dropbox.com/s/q0dpuyqco456jv7/AAC%20Modeling%20Self-Assessment.pdf?dl=0
  - Reflection cards
    https://www.dropbox.com/s/zbuxuskq6ne7e34/Self-Reflection%20Cards.docx?dl=0
- Making communication cards functional and accessible:
  - Breakaway lanyards
  - Retractable ID badge holders
  - Velcro communication boards around room
  - Folders with pockets for easily changing out fringe vocabulary
- Peer modeling:
  - Communication club
  - Buddies & Mainstreaming
- Service delivery models:
  - 3:1 model
    https://www.dropbox.com/s/fj66kpdfku9yqxo/0422_Montgomery_Nancy.pdf?dl=0
- Resources:
  - http://coreword.assistiveware.com/
  - http://praacticalaac.org/
  - http://www.project-core.com/core-communication-systems/
  - http://www.speakforyourself.org/
  - http://aacgirls.blogspot.com/

Expanding and Customizing Spanish Core Vocabulary for AAC

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THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

Introduction

As the population of native Spanish-speaking families in the United States continues to increase, it is important that this community's communication needs are met.

We developed Spanish Core Vocabulary boards for augmentative and alternative communication (AAC), and accompanying manuals for monolingual Spanish and bilingual Spanish and English use.

Learner outcomes:

- Explain the English and Spanish Core Vocabulary development process
- Illustrate how to customize Core Vocabulary boards for individual users
- Demonstrate procedures for using Spanish Core Vocabulary

más	quién	dónde	qué	por qué	diferente	yo/mi/me	tú/tu
nosotros	él/ellos	ella/ellas	eso	su	esperar	bien	mal
no	sí	perdón	poco	mucho	ya	ser =	estar =
hacer	ir	contar	dar	pensar	dejar	gustar	mirar
tener	ayudar	querer	jugar	fíjate	necesitar	leer	parecer

Characteristics of a Core Vocabulary

- Limited set of highly useful words
- Consistent location of vocabulary
- Words apply across settings
- Very few nouns are included, to avoid limiting the user to naming and requesting
- Vocabulary is made up primarily of pronouns, verbs, descriptors, and prepositions to allow for more meaningful communication

Core Vocabulary Emphasizes

- Learning that builds over time
- Application of knowledge and skills
- Active participation and interaction in learning activities
- Collaboration and communication
- Ongoing instruction in reading, writing, speaking, listening

Modifications to Facilitate Teaching Core Vocabulary

We expanded on Fairchild et al.'s initial Core 40 Spanish vocabulary research by reorganizing and redesigning the Spanish Core Vocabulary board and adapting it for a variety of contexts.

The vocabulary words were grouped into categories including pronouns, verbs, question words, adjectives and interjections.

We identified an initial "core 6" representing a word from each category. We then identified "next words" to add to this initial core.

The following board illustrates the process of expanding the core from 6 words to 40 words for a typical user.

nosotros/nos	él/ellos ella/ellas lo/la/le	quién	dónde	cuando	por qué	dar	esperar
eso	tu/tú	yo/mi/me/mío	qué	ayudar	ir	llevar	contar
mismo	bien/bueno	sí	ser/estar	tener	hacer	dejar	mirar
diferente	mal	no	querer	necesitar	poner	pensar	jugar
ya	poco	menos	mucho/tanto	más	gustar	parecer	fíjate

Bilingual Core Vocabulary

nosotros/nos	él/ellos ella/ellas lo/la/le	quién	dónde	cuando	por qué	dar	para
eso	tu/tú	yo/mi/me/mío	qué	gustar	poner	llevar	mirar
mismo	bien/bueno	sí	ser/estar	tener	hacer	dejar	jugar
diferente	mal	no	querer	ir	ayudar	abrir	adentro
hola	poco	menos	mucho/tanto	más	ya	otra vez	afuera

Implementing Spanish Core Vocabulary

Example activities for Core 6 introduction phase:

Qué

This is the first of the five question words to be introduced as it is the most commonly used. It can be useful to indicate that the AAC user did not hear or understand what was said to them and to request repetition.

Ser/Estar

Ser and estar were merged into one cell as they both convey existence. Practice combining "ser/estar" with "yo" in phrases conveying emotions, physical attributes, etc. Consider how "ser/estar" could be combined with "qué". "Qué" + "ser/estar" could be a way to signal "¿Qué es?".

Training and Capacity Building

To ensure sustainability of this project, we created manuals to support professionals' understanding of how to implement core vocabulary boards.

Our manuals explain using sample core vocabulary boards to facilitate language development. We encourage clinicians to adapt the boards.

Faculty and students from UNC-CH will provide a training workshop to students at the Universidad Rafael Landívar in Guatemala.

The workshop will explain selection criteria for core vocabulary and training in modeling language input with core vocabulary boards.

References

https://www.med.unc.edu/ahs/clds/resources/core-vocabulary
A complete list of references is available upon request from amy_munekata@med.unc.edu.

Financial and Nonfinancial Disclosures

Participation in Active Recreation: Experiences of Adults with Acquired Conditions who use AAC

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Overview of Handout

- Background & Related Research
- Methodology & Participant Profile
- Data Analysis
- Results
- Key Discussion Points
- Impact
- Future Directions
- Selected References

Overview: Adults with Acquired Conditions
(Beukelman, Fager, Ball & Dietz, 2007)

- Adults with acquired conditions may have complex communication needs & rely on AAC
- Acquired neurological conditions may impact:
  - Participation patterns
  - Self-care and support in daily activities
  - Reduction or loss of employment
  - Restriction or loss of social network
  - Participation in recreation

Participation Patterns
(Beukelman & Mirenda, 2013)

- Individuals with some acquired physical conditions (e.g. multiple sclerosis) may be unable to attend school or work due to a range of limitations (e.g. vision, balance)
- Individuals with ALS may center most activities(e.g. work, social) around their home environment & limit community engagement

Social Networks
(Fried-Oken, Beukelman, & Hux, 2012)

- Social networks are reduced for people with acquired conditions
- Meaningful life outcomes become important
- Social participation may be highly desired
- Adults enjoy sharing stories & personal experiences

Social Role Changes
(Dietz, et al., 2013)

- Interviews conducted with caregivers, people with aphasia, & friends
- Conclusion: Adaptations & shifts of social roles & lives occur after aphasia in 3 primary areas:
  - Interpersonal life changes
  - Community interactions and hobbies change
  - Communication & AAC

AAC & Recreation
(Dattilo et al., 2008)

- An online focus group with eight adults with cerebral palsy who use AAC
- Focus on passive activities & community recreation
- Benefits, barriers, supports & recommendations identified by participants
- Recreational activities that participants listed were primarily sedentary in nature (e.g. listening to music, watching T.V., going out to dinner)

Research Questions

(a) What types of benefits do individuals with acquired conditions who use AAC experience in active recreation?

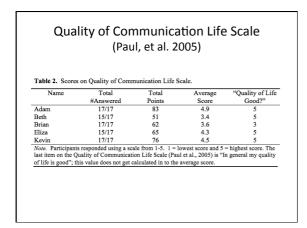(b) What types of barriers and supports are present across active recreation?

(c) How does communication impact participation, social engagement, and interactions across active recreation?
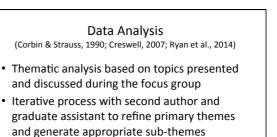
(d) Who are the individuals and how do they participate in active recreation?

Methodology

- An online asynchronous focus group was conducted using a password protected online bulletin board
- Participants generated responses based on topics provided by the principle investigator who was also the moderator of the group
- Six topics were posted over the nine-week period

Table 1. Characteristics of the participants.

Characteristic	Adam	Brian	Beth	Eliza	Kevin
Age	42	46	42	40	58
Disability	CVA	CVA	TBI	ALS	CVA
Years since diagnosis	9	7	19	14	11
Employment	Currently unemployed, volunteer, aphasia advocate+speaker	Currently unemployed, volunteer at MRC	Currently unemployed	Retired navy nurse	Currently unemployed
Means of communication	Speech+iPad with typing, speech to text, phrase-board	iPad mini+Mac Book Pro with text to speech	Tablet +cell phone with typing, speech	Tobii C15 with eyegaze, + computer with Dasher, Phrase-board	iPad with typing, pen & paper, gestures
Mobility	Walks independently	Walks independently	Walks independently	Wheelchair	Walks with assistance
Types of active recreation	Snowboarding, cycling, sky-diving, scuba diving,	Skiing, cycling, running, walking	Hiking, paddle boards, kayaking, walking	Skiing, water skiing, cycling, sailing,	Water & snow skiing, rock climbing, hang-gliding, rowing
Affiliation with an adaptive sport program	Yes	Yes	Yes	Yes	Yes
Participation in active recreation over past 12 months	11-15 times	20+ times	6-10 times	20+ times	6-10 times

Note. CVA=cerebrovascular accident. TBI=traumatic brain injury. ALS=amyotrophic lateral sclerosis. MRC= Music Resource Center. Pseudonyms have been used to protect confidentiality of the participants. The information for this table was collected from a pre-focus group survey.

Quality of Communication Life Scale
(Paul, et al. 2005)

Table 2. Scores on Quality of Communication Life Scale.

Name	Total #Answered	Total Points	Average Score	"Quality of Life Good?"
Adam	17/17	83	4.9	5
Beth	15/17	51	3.4	5
Brian	17/17	62	3.6	3
Eliza	15/17	65	4.3	5
Kevin	17/17	76	4.5	5

Note. Participants responded using a scale from 1-5. 1 = lowest score and 5 = highest score. The last item on the Quality of Communication Life Scale (Paul et al., 2005) is "In general my quality of life is good"; this value does not get calculated in to the average score.

Data Analysis
(Corbin & Strauss, 1990; Creswell, 2007; Ryan et al., 2014)

- Thematic analysis based on topics presented and discussed during the focus group
- Iterative process with second author and graduate assistant to refine primary themes and generate appropriate sub-themes
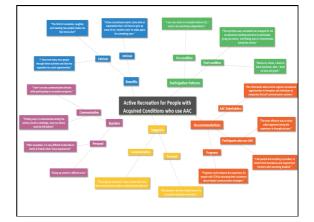- Crystallization, reliability & member check

Results

- 4/5 participants posted responses on 8 topics, including an introduction
- 58 total posts by the 5 participants over the span of 9 weeks
- Posts included responses to primary topics & reactions to other members posts
- Results are presented across five primary themes with either 2 or 3 related subthemes(see mind map)

Discussion
Programs & Partners

- Specialized adaptive sport programs support full participation through shared activities of interest with community members
- Active recreation staff & volunteers are critical communication partners
- More can be done to enhance, capture, & share experiences by increasing opportunities for communication and social interaction

Discussion
Engagement & Participation

- People in active recreation build social relationships through participation in moderate to high risk activities
- Communication is key in active recreation; but, aided AAC methods are frequently missing
- Acquired conditions may shift participation patterns as individuals accept new ways to access and engage in active recreation
- Intrinsic factors may impact participation & communication across active recreation
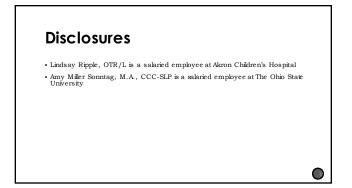
Future Directions

- Further investigate how stakeholders in active recreation may support communicative competence for people who use AAC
- Consider psychosocial profiles for AAC users who participate in recreation and the impact on communicative competence
- Investigate how AAC systems and capture technology may be used around active recreation, including documentation and dissemination
- Continue training volunteers and other stakeholders to support increased opportunities for communication, interaction, and exchange across active recreational settings

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AAC Multidisciplinary Treatment for Increased Communication and Functional Participation

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Disclosures

- Lindsay Ripple, OTR/L is a salaried employee at Akron Children's Hospital
- Amy Miller Sonntag, M.A., CCC-SLP is a salaried employee at The Ohio State University

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Separate Sessions – What Was Working?
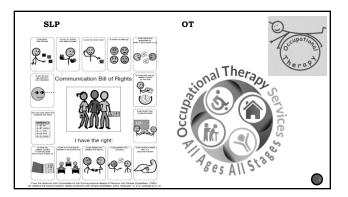
Speech/Language Therapy

- Targeted vocabulary for language development
- SLP knew the SGD set-up, programming, and language organization
- SLP had fun activity ideas to target vocabulary
- Knowledge of alternative access, but trial and error approach

Occupational Therapy

- Sensory-based treatments for functional participation in activities of daily living and school skills
- OT was familiar with wheelchair positioning to optimize functional upper extremity (UE) use
- Holistic approach to improve independence across all environments
- Increasing knowledge of alternative access.

Separate Sessions – What Wasn't Working?

SLP

- Difficult to find time to teach family without losing focus on the child
- Client not in a ready to learn state
- Client frustrated when couldn't participate in activities (stacking, cutting, gluing, rolling a ball, etc...)
- SLP had a difficult time knowing when client responses were a sensory issue versus a behavior issue
- SLP would lose the focus of the client when she would need to program something.

OT

- Client reaching a point of self-regulation and then quickly becoming frustrated (dysregulated) due to lack of ability to communicate wants/needs
- The most attentive moments tended to be when the OT was behind the patient and visual/expressive communication was lost to **ensure safety**.
- OT's initial lack of knowledge about device, set up and modifications
- Safety jeopardized when turning focus away from sensory activities to device settings

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SLP

- Access issues – SLP is fairly knowledgeable but more of a trial and error situation
- Ability/knowledge to access and use sensory equipment
- Parent support – SLP had it, but it is always better to have reinforcement

OT

- Management of switch placement, switch type, positioning, and maintaining engagement of patient often requires 100% of OT's attention and is **intense**
- Unable to provide parents with the device support necessary for carryover in the home

Sensory Integration for the SLP

Why multidisciplinary treatment was essential

Jane Ayres…

- **Sensory Integration and the Child: Understanding Hidden Sensory Challenges**, 25th Anniversary Edition, 2005, Western Psychological Association
- Who is she?
- What did she do?

Dr. A. Jean Ayres, PhD, OTR, FAOTA

- Occupational Therapist and Psychologist.
  - First clinician who:
    - Researched the impact of sensory processing on learning, emotions and behavior
    - Designed first pediatric based OT standardized assessments. They looked at sensory function and dysfunction. (SIPT)
    - Developed interventions principles to address SI dysfunction and strategies to improve function and participation
    - Conducted sensory research starting in the 1960's that lead to current SI principles

Sensory Integration

Dr Ayres defined sensory integration as "the organization of sensations for use. Our senses give us information about the physical conditions of our body and the environment around us… The brain must organize all of our sensations if a person is to move and learn and behave in a productive manner"

Integration = Organization

- "The central nervous system, especially the brain, is designed to organize countless bits of sensory information into a whole integral experience."
- "If some part of the information streaming into the brian from the body systems is overwhelming or under appreciated… then the body is not experiencing organization/integration, causing dysfunction of adaptation to the environment."

Sensory Integration

- Sensory integration happens automatically in most individuals.
- We take for granted that the SI systems work delicately together.
- We assume that our patients' systems work as seamlessly as ours

Source: UCSF / iStockPhoto.com

Sensory Integration and speech / language development

- Speech and language depends on many sensory integration processes
- Often a child's speech/language deficits bring them to the outpatient facility for "speech/language delay"
- Involving OT in co-treatment or a referral for sensory based treatment is appropriate!

How many senses do we have?

- What makes up the sensory system?
- Five classic senses

  - Vision
  - Hearing
  - Touch (tactile)
  - Smell
  - Taste

No! There's 2 more

- **Vestibular** (balance and the sense of movement)
- **Proprioception** (the sense of knowing where your body is in space).

Sensory Integration and AAC

- What prevents the child from functionally using AAC device across all of his / her environments?
  - Poor motor planning
  - Poor attention to learning new tasks
  - Overreaction/ under reaction to input/ stimuli
  - Poor sensory regulation
  - ??????

Sensory Integration and AAC

▪ Remember this?

▪ The tactile, vestibular and proprioceptive systems must be modulated prior to visual/ auditory information.

PYRAMID of LEARNING

"The autistic child senses input from his muscles and joints better than he does through his eyes and ears," p.125 Ayers

Also applies to the child with SPD

What does SPD look like?

• Seeking and rejecting excessive vestibular or proprioceptive movement is **not a normal** adaptive response…

• Lays on the tabletop
• Hangs on his/her caregiver
• Wiggles in chair, rocks chair, can't sit still
• Can't follow directions
• Impulsively grabs materials
• Needs fidget in hand
• 0-60 meltdown
• Self-injurious behaviors
• Unsafe behaviors, climbing on furniture
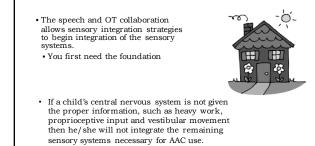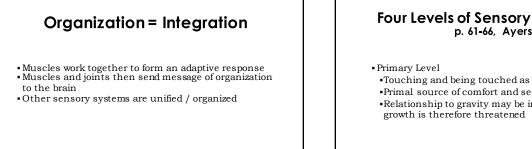• Need restrained in Rifton or table arranger
• Trouble regulating their voice
• Running in hall, running away from you

SENSORY INTEGRATION DISORDER

▪ The speech and OT collaboration allows sensory integration strategies to begin integration of the sensory systems.
  ▪ You first need the foundation

• If a child's central nervous system is not given the proper information, such as heavy work, proprioceptive input and vestibular movement then he/she will not integrate the remaining sensory systems necessary for AAC use.

Organization = Integration

▪ Muscles work together to form an adaptive response
▪ Muscles and joints then send message of organization to the brain
▪ Other sensory systems are unified / organized

Four Levels of Sensory Integration
p. 61-66, Ayers

▪ Primary Level
  ▪ Touching and being touched as an infant
  ▪ Primal source of comfort and security
  ▪ Relationship to gravity may be insecure, emotional growth is therefore threatened

Four Levels of Sensory Integration

▪ Second Level
  ▪ Tactile
  ▪ Vestibular
  ▪ Proprioceptive
    ▪ The integration of these systems can be identified by:
      ▪ Coordination
      ▪ Motor planning (necessary for device use)
      ▪ Attention

Four Levels of Sensory Integration

▪ Third Level
  ▪ Continuous flowing process. Each level makes the next one possible!
  ▪ Improved
    ▪ Body awareness including function of oral musculature for speech
    ▪ Visual perception
    ▪ Purposeful engagement
  ▪ "… the auditory and vestibular systems are intimately related. Listening to people using language is essential for language comprehension and speech development, but the vestibular system must help the brain process what is heard."

Four Levels of Sensory Integration

▪ Fourth Level
  ▪ Different parts of the brain develop greater efficiency in processing sensory input and organizing adaptive responses
  ▪ Specialization of skills via integration of the foundational sensory systems.

• What are the three foundational sensory systems?

What you can do to assist with sensory regulation (organization)

▪ Recognize the problem
  ▪ What isn't normal?

What you can do

▪ Control the environment
  ▪ Dim the lights
  ▪ Use bean bags, exercise ball, seat disc, etc
  ▪ Complete heavy work on the way to treatment room (animal walks, skipping, jumping)
  ▪ Movement breaks during the session
  ▪ Limit talking between adults
  ▪ Give the child ownership of his/ her need for sensory regulation and tools they can use to modulate
  ▪ Lower your voice/ level of excitement

Barriers to Co-Tx

You know why you want to do multidisciplinary treatment, but how?

Initial Barriers to Co-Treatment

- CHANGE: It's never easy
  - To guarantee insurance coverage and justify the treatment method, it was necessary to provide the evidence required to gain the support of our management team.

everyone wants better.
no one wants change.
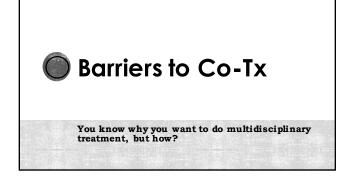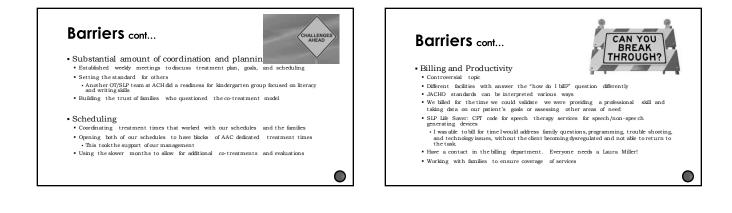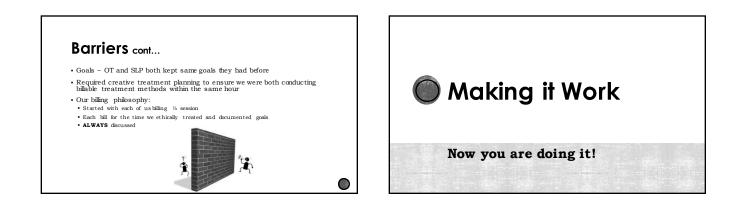
Barriers cont...

CHALLENGES AHEAD

- Substantial amount of coordination and planning
  - Established weekly meetings to discuss treatment plan, goals, and scheduling
  - Setting the standard for others
    - Another OT/SLP team at ACH did a readiness for kindergarten group focused on literacy and writing skills
  - Building the trust of families who questioned the co-treatment model

- Scheduling
  - Coordinating treatment times that worked with our schedules and the families
  - Opening both of our schedules to have blocks of AAC dedicated treatment times
    - This took the support of our management
  - Using the slower months to allow for additional co-treatments and evaluations

Barriers cont...

CAN YOU BREAK THROUGH?

- Billing and Productivity
  - Controversial topic
  - Different facilities with answer the "how do I bill?" question differently
  - JACHO standards can be interpreted various ways
  - We billed for the time we could validate we were providing a professional skill and taking data on our patient's goals or assessing other areas of need
  - SLP Life Saver: CPT code for speech therapy services for speech/non-speech generating devices
    - I was able to bill for time I would address family questions, programming, trouble shooting, and technology issues, without the client becoming dysregulated and not able to return to the task.
  - Have a contact in the billing department. Everyone needs a Laura Miller!
  - Working with families to ensure coverage of services

Barriers cont...

- Goals – OT and SLP both kept same goals they had before
- Required creative treatment planning to ensure we were both conducting billable treatment methods within the same hour
- Our billing philosophy:
  - Started with each of us billing ½ session
  - Each bill for the time we ethically treated and documented goals
  - **ALWAYS** discussed

Making it Work

Now you are doing it!

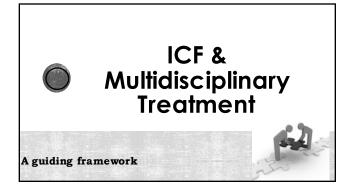## 3 Years into Multidisciplinary Tx

Successes – Beyond Patient Outcomes

- Support of upper management
  - Educational opportunities provided
- Support of AAC Team
- Weekly AAC meetings for increased patient success overall independent of tx approach
- No insurance denials due to co-tx
  - Led to some initial groups – Landin / Andre
- Collaboration with AAC manufacturers
- More co-tx groups/sessions with non-AAC kids (feeding team)
- OT gaining knowledge of speech/lang
- SLP gaining knowledge about OT & SI

Ongoing Barriers

- Scheduling
  - Block scheduling for burst tx
  - Family availability
  - Tx availability
- Shift in how hospital measures productivity
- Having necessary equipment with more people doing co-tx
- Space to co-treat
- Demand for meeting needs of new patients
- Time it takes to fund AAC devices

Tips for Co-Treating

- Know you don't know it all
- Your therapy knowledge and skills are going to be challenged
- Your partner will tell you "no" and that your activity and the way you responded didn't really work. That can be hard to hear.
- It's a true give and take and you have to have trust
- If you focus on the client's best interest and put your ego away – you will have great success
- Learn how to read others' signals

Guiding Principles

- Paul, Blosser, & Jakubowitz, 2006 – writing about literacy partnerships with schools. I tweaked these slightly based on what we did.
1. Engage in **mutual problem-solving** and **shared responsibility** for positive client outcomes.
2. Establish communication and OT goals/priorities for clients based on their strengths and needs.
3. Form partnerships that are **nonhierarchical** and based on **co-equal partnerships**.
4. Recognize that collaboration is a **dynamic process** and will change as the needs change.
5. **Respect** different professional perspectives.
6. Make partnerships the priority.
7. Establish **realistic expectations** for the partnership.
8. **Celebrate success!**
9. AS/LR addition: You need to be able to address your discipline specific goals for a majority of the session – **whether your discipline is in the "lead" role or not.**

ICF & Multidisciplinary Treatment
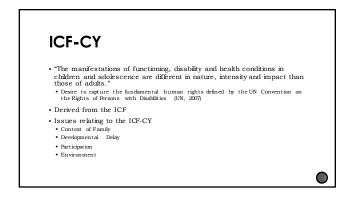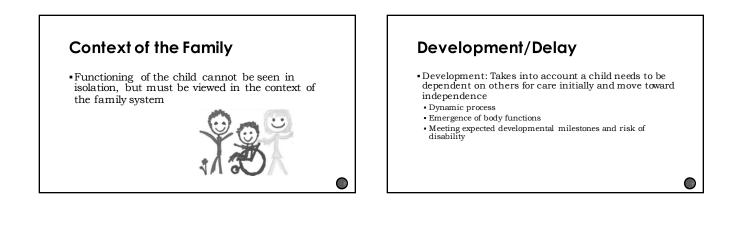
A guiding framework

ICF

- International Classification of Functioning, Disability, and Health
  - Universal classification of disability and health developed by WHO (World Health Organization)
  - Purpose: Make ICF a tool for measuring functioning in society, no matter what the reason for one's impairments
- Targets function and meaningful activities across all environments
  - Insurers want to see this!
- This framework justifies rehab goals that target functional participation in all aspects of one's life
- This framework justifies rehab goals that target functional participation in all aspects of one's life as well as societal relations... **COMMUNICATION** is necessary for this to occur!
- This framework fits very well to justify, validate, and show the value of co-treatment
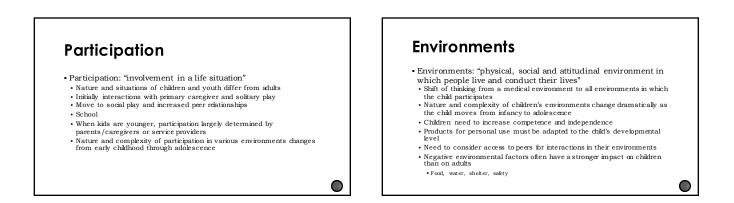
ICF-CY

- **International Classification of Functioning, Disability and Health for Children and Youth**
- ...expands the coverage of the main volume through the addition of content and greater detail to encompass the body functions and structures, activities, participation and environments specific to infants, toddlers, children and adolescents
- The age range covered by the ICF-CY is from birth to 18 years of age, paralleling the age range of other United Nations conventions. As a member of WHO Family of Internation Classifications, the ICF-CY complements the ICD-10, and other derived and related classifications, by providing a framework and standard language for the description of health and health-related states in children and youth
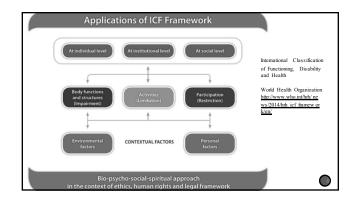
International Classification of Functioning, Disability, and Health: Children & Youth Version : ICF-CY, World Health Organization, 2007
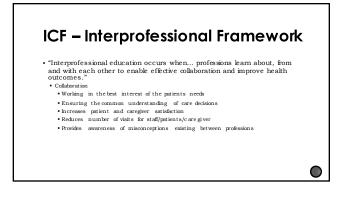
ICF-CY

- "The manifestations of functioning, disability and health conditions in children and adolescence are different in nature, intensity and impact than those of adults."
  - Desire to capture the fundamental human rights defined by the UN Convention on the Rights of Persons with Disabilities (UN, 2007)
- Derived from the ICF
- Issues relating to the ICF-CY
  - Context of Family
  - Developmental   Delay
  - Participation
  - Environment

Context of the Family

- Functioning of the child cannot be seen in isolation, but must be viewed in the context of the family system

Development/Delay

- Development: Takes into account a child needs to be dependent on others for care initially and move toward independence
  - Dynamic process
  - Emergence of body functions
  - Meeting expected developmental milestones and risk of disability

Participation

- Participation: "involvement in a life situation"
  - Nature and situations of children and youth differ from adults
  - Initially interactions with primary caregiver and solitary play
  - Move to social play and increased peer relationships
  - School
  - When kids are younger, participation largely determined by parents/caregivers or service providers
  - Nature and complexity of participation in various environments changes from early childhood through adolescence

Environments

- Environments: "physical, social and attitudinal environment in which people live and conduct their lives"
  - Shift of thinking from a medical environment to all environments in which the child participates
  - Nature and complexity of children's environments change dramatically as the child moves from infancy to adolescence
  - Children need to increase competence and independence
  - Products for personal use must be adapted to the child's developmental level
  - Need to consider access to peers for interactions in their environments
  - Negative environmental factors often have a stronger impact on children than on adults
    - Food, water, shelter, safety

Applications of ICF Framework

International Classification of Functioning, Disability and Health

World Health Organization http://www.who.int/hrh/news/2014/hrh_icf_framework/en/

ICF – Interprofessional Framework

- "Interprofessional education occurs when… professions learn about, from and with each other to enable effective collaboration and improve health outcomes."
  - Collaboration
    - Working in the best interest of the patients needs
    - Ensuring the common understanding of care decisions
    - Increases patient and caregiver satisfaction
    - Reduces number of visits for staff/patients/caregiver
    - Provides awareness of misconceptions existing between professions

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Using the ICF-CY

- Does the child or adolescent have problems of organ, limb or other body structures?
- Is the child or adolescent manifesting problems in body functions?
- Does the child or adolescent have problems executing tasks or actions?
- Does the child or adolescent have problems engaging in age appropriate life situations?
- Are there environmental factors that restrict or facilitate the child's or adolescent's functioning?

Typical Goal Areas

SLP

- Vocabulary development and use with focus on core vocabulary
- Expanding communication partners and environments
- Build confidence communicating with non-familiar communication partner
- Communicating in an environment that has external distractions (other children, noise, preferred, non-preferred activities
- Initiating conversation with a variety of communication partners
- Increasing conversational turn taking
- Replicating "real world" environments to practice communication
- Using core vocabulary to engage in a variety of pragmatic functions
- Increasing and/or preserving MLU (mean length of utterance) in more demanding environments

OT

- Attention to task
- Following commands for non-preferred tasks
- Self-regulation techniques to prepare and attend to activities
- Transitioning between activities and environments
- Participation in age-appropriate fine and gross motor goals
- Turn taking in a social setting
- Caregiver education
- Safety in transporting the SGD in across functional environments
- Wheelchair positioning and device mounting
- Switch type and placement

Co-Treatment Session Components

- Movement component
  - Vestibular movement – swing
  - Proprioceptive input – slide, trampoline, tunnel, crawling
  - SGD is always incorporated into this!
- Fine/Gross Motor component
  - Gross motor skills including riding a bike, kid yoga, animal walks and more
  - School based skills: cutting, hand-writing, coloring, bilateral hand coordination tasks
  - Dressing skills for independence with ADLs
  - SGD is always incorporated into this!

Co-Treatment Session Components

- Activity with vocabulary building focus
- Turn taking
- Activities that would guarantee client success and activities that replicate "real world chaos"
  - Chaos is: lights, noise, another patient, lots of toys in the room, siblings, etc.…
- The client is expected to tell caregiver something about the session at their level

Meshing SLP and OT Goals:

- OT activities are motivating, whether they are fun, hard, silly, sad, exciting
  - Many opportunities for comments, requests, protests, labels, ask/answer questions, and on and on and on
- Great opportunity to model many pragmatic functions
- During OT tasks, SLP would
  - Model vocabulary on SGD
  - Incorporate language development
  - Model and teach true conversational skills with another person
  - Make quick program changes while the client is cutting, swinging, crawling, etc...

Meshing SLP and OT Goals:

- OT learned how and when to encourage the device use, enhancing communication attempts (beyond pointing, grunts, single words, and meltdowns)
- Better able to provide sensory-based treatment with increased safety and efficacy
- Better able to provide caregiver support for SGD set-up and functional use
- Functional movement based therapy allowed for incorporation of device communication in a typical child setting

Meshing SLP and OT Goals

- Modeling of SGD use in typical play settings to decrease fear of "breaking the device" and concerns about how to use the SGD at home/school.
  - Hearing OT answer the question about how often should the child have access to the device is HUGE.
  - *"It's like your underwear; you don't leave home without it!"*
- Greater willingness of child to participate in SGD use with expectation from both therapists
- OT received hand-on training for SGD set-up and modification and vocabulary organization via modeling from SLP and patient

Co-Treatment as a Time Saver

- It does take time to coordinate, schedule, and plan the sessions BUT...
- You save time by not having to consult with the other discipline after the session to prolem-solve. *You can address concerns immediately!*
- If you put in the time initially you will find you get in the grove. We found we didn't have to plan activities together prior to each session because:
  - We knew each other's common goals – **shared responsibility**
  - We knew our goals were equally important – **nonhierarchical**
  - We believed in the **dynamic process** of collaboration
  - SLP and OT would each arrive to the session with 1-2 activities ready for the session with a specific purpose
  - We'd plan the order of the session with the client
  - In 2-3 minutes after the session we could debrief on the good, the bad, the exciting, and the ugly to know how to plan our activities for the next session.

How to debrief in 2-3 minutes

- Check your ego at the door
- Remember – it's the patient's best interest
- You and your partner have the same goals
- Be ready to hear "That just didn't work." It doesn't mean you aren't a good therapist.
- More often you will hear your partner say how "the success your child just had, wouldn't have been possible without my partner."

Introduction

　　People with highly unintelligible speech have specific and differing communicative needs, and they also develop different and highly individualized compensatory strategies and alternate methods of communication. One such individual will be the focus of this paper: Joe is an individual with CHARGE syndrome. CHARGE syndrome is a rare genetic disorder characterized by abnormalities in the eye, ear, cranial nerves, cognitive deficits, and several other secondary characteristics that manifest differently in each individual (CHARGE Syndrome Foundation, 2005). Individuals with CHARGE syndrome, such as Joe, have specific and unique communicative needs. In his case, the most relevant characteristics include progressive sensorineural hearing loss from birth, intellectual impairment (mild), and status as an adult-age recipient of a single cochlear implant. Additional complications as a part of the CHARGE syndrome complex (nystagmus of the eyes, left side facial paralysis, etc.) play a relatively minor part of his current communication difficulties. He has functional language skills in his native ASL modality, but at a level approximately commensurate with intellectual ability: he communicates about everyday routines, but has limited ability to communicate about topics requiring understanding of temporal, causal and interpersonal relational concepts. Progress has been made with therapeutic support. He is employed in a restaurant as a dishwasher, and has had the support of a manager and a friend who also use ASL. Joe's mother has learned to communicate with Joe via ASL, but other family members are not proficient. Learning to use a CI as an adult is challenging for everyone, but even more so for someone with diminished cognitive ability, and relatively limited opportunities for interaction within the hearing community. So for him, development of listening skills and ability to understand spoken language proceed very slowly. With limited speech capabilities, but a recently developed desire to be part of spoken conversation and interaction, he has a need for AAC.

　　The purpose of this case study research presentation is twofold: first, to illustrate how everyday technologies can play a role in what appears to be a transitional stage in the habilitation of someone with complex communication needs secondary to a lifelong hearing impairment, and consequent history of default exclusion from the interactions with the community of non-ASL communicators; and second, to document how the presence of aided communication tools can change the dynamic of conversational discourse.

Questions:

This paper strives to tackle the questions:

1. How does the use of an aid during a turn-at-talk impact the *current user's interactions with other participants in the exchange? (*Joe or a partner)
2. How are participants not actively holding the floor affected by the presence of aided communication?

Methods:

　　Video recordings of Joe with 1 or 2 communication partners transcribed using the ELAN software package (Max Plank Institute for Psycholinguistics, The Language Archive, Nijmegen, The Netherlands). Transcription layers included (i) phonetic information describing Joe's *speech attempts* (i.e. vocalizations that contain meaning identifiable to listeners) and other vocalizations (i.e. those without readily identifying meaning, but potentially discourse marker significance), (ii) his body position

movements and orientation in relation to the AAC device difference communication partners, (iii) eye-gaze shifts (engagement), and his various unaided modalities (movements/natural gestures/ASL). The transcripts were then analyzed using the conventions of Conversation Analysis (Goodwin & Heritage, 1990), and conventions of multimodal discourse analysis (Norris, 2004) which examine the interactions between the participants as they work together to co-construct a conversation. Unlike many studies of aided communication, this study addresses the situation in which everyone is obliged to use various aids because Joe requires alternative communication to compensate not just for his limited oral language and limited speech intelligibility, but also to supplement his emerging speech discrimination ability (i.e. it serves as input and output).

Results:

Analysis reveals that the AAC device impacts both Joe's and the conversation partner(s) interactions and engagement during the conversation.

1. Negotiating turns at talk

During turns at talk, all participants in the conversation split their focus between the speaker, the aide and the stimuli being discussed (if applicable). Conversations are social interactions, in which all participants mutually negotiate turns-at-talk; the aide is unable to actively negotiate its turn-at-talk, which necessitates Joe and his conversation partners to actively negotiate both their own roles within the conversation, but also the aide's role subsequent to theirs as well. Essentially, in order for Joe to take a turn-at-talk, the message needs to be constructed with aide of the device, transmitted to Joe, who in turn formulates his message and presents it (verbally or with ASL/natural gestures) where it is then entered into the device by either Joe or a conversation partner. This turns what would be a binary choice (attempt to keep the turn, or attempt to pass the turn on) into a more complex dynamic of multiple level choices (keep the turn, give device a turn, give turn away) and a minimum of 2 disengagements/reengagements in order to get to the next "turn at talk." With this being the case, the augmentative device becomes the "conversation dominator" that all other participants must compete with for a turn. Joe navigated this additional level of complexity adeptly and was an active part in the conversation, but had to work harder than his conversation partners to actively keep or select his turns-at-talk. Additionally, the amount of engagement shifts from Joe was exceedingly higher than those of his conversational partners, including the clinician who was facilitating both the use of the augmentative device and the conversation itself.

2. Negotiating topics

Negotiating topics within this conversational structure is somewhat complex. Due to the need to augment both the input and output of Joe's communication, multiple modalities of communication are utilized to negotiate topic shifts. Joe's conversation partners will often introduce a topic verbally, augmenting the message with either a gesture/ASL, iPad or written production serving as secondary input stimuli. These strategies are often successful, but not always immediately understood or accepted by Joe. Joe often self-initiates topic shifts either by using the iPad/iPhone or through use of ASL/natural gestures. The topic is then discussed by the conversation participants. Because of the use of multiple modalities the initiation and negotiation of a topic is a complex process that necessitates several discourse turns to fully accomplish.

Conclusions and Implications:

        In aided communication research findings suggest partner rely on use of questions as frequent co-construction tools (Solomon-Rice & Soto, 2011). Turn-dominance by natural speakers is a well-known finding in the AAC literature (e.g. Smith, 2003). Soto and Harmann (2006) incorporate the pattern vertical discourse sequences (Scollon, 1976) to describe how both the child and the communication partner contribute to the creation of the child's utterance across several discourse turns. When examining Joe and his partners' conversational behaviors, it is apparent that the addition of the augmentative device to the conversation increased the level of complexity and necessitated additional work from all parties to maintain the flow of the conversation and negotiate topics. The need for augmentation of both the input and output signals of communication necessitates frequent shifts in attention from the participant to the device, to the other participant (to assess if meaning was transmitted accurately) back to the device, which then generates a turn relevant place for either a new speaker or a continuation from the current participant. There is a minimum of 2-3 shifts in focus (engagement) occurring per conversational turn, the majority of which are taken up by the augmentative device. Because of this, the AAC device plays an active role within the conversation, functioning almost like an additional conversation partner that dominates the conversational encounter.

        Results of this study reveal the overall change to the conversational dynamic to all participants in the conversational encounter. Clinically, this change in conversation dynamic needs to be accounted for in how we as speech language pathologists structure our clinical sessions and facilitate the use of AAC devices during conversational exchanges.

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