Building Language & Literacy Skills with Children Who Require AAC

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Development of language & literacy skills

- During the first 5 years of life, typically developing children make a remarkable transition
  - from birth
    - preintentional and presymbolic
  - to the school years
    - express a wide range of intents
    - know a wide range of vocabulary concepts
    - generate complex sentences to communicate thoughts & feelings
    - begin to learn conventional literacy skills

Language & literacy development

- pragmatic development
  - development of turn taking skills/ expression of communicative intents
- semantic development
  - acquisition of symbolic concepts
- syntax and morphological development
  - development of more complex communication
- development of phonological awareness skills
  - ability to notice /think about sound structure of words
- development of literacy skills
  - acquisition of conventional reading and writing skills

Children with complex communication needs

- Children with complex communication needs may experience significant challenges at each stage of development
  - Cerebral palsy
  - Down syndrome
  - Autism spectrum disorders, etc.

Challenges for children with CCN

- Limited opportunities for communication, language & literacy learning
- Lack of evidence-based interventions
  - 80% of children were older than 2 years of age (Hustad, et al., 2005)
- Low expectations
- Inappropriate AAC systems
  - May not be appealing
  - May be difficult to learn and use
  - May not provide access to sufficient language

Implications for children with CCN

- Children with CCN typically
  - Start the language and literacy learning process later than their typically developing peers
  - Confront numerous challenges in the process that limit their language and literacy learning
  - Fall further and further behind their typical peers during the first 5 years of development
- BUT it does NOT have to be this way

Goals of the Session

- Describe the components of successful evidence-based interventions to support the language & literacy development of children with CCN
- Illustrate effective evidence-based practices through a series of longitudinal case studies describing intervention over a number of years
- Report on language & literacy outcomes for the children
- Discuss implications for practice

Research base

- Interventions based on two research studies
  - Part of the AAC-RERC II funded by the National Institute on Disability and Rehabilitation Research
- Study #1 (Light & Drager, 2003-08)
  - Investigate effects of AAC interventions on communication and language development of young children with CCN (birth to 3 years)
    - Redesign AAC systems
    - Provide opportunities for social interactions
    - Model AAC use

Research base

- Study #2 (Light & McNaughton, 2003-08)
  - Develop & evaluate effective instruction to maximize the conventional literacy skills of individuals who require AAC
    - Direct instruction in basic skills
      - E.g., phonological awareness skills, letter sound correspondences, decoding
    - Numerous opportunities to apply skills in context of meaningful reading/ writing experiences

Goals of intervention with young children with CCN

- Intervention is guided, but not bound by, a developmental model
- Goals of intervention
  - Increase active participation in social interactions
    - Increase turn taking
    - Ensure breadth of communicative functions
  - Develop a wide range of semantic concepts
  - Build greater complexity of language structure
  - Build phonological awareness skills & conventional literacy skills

Case #1

- 9 month old girl
- Down Syndrome
- Lives at home with mom & dad, 2 older siblings
- Baseline
  - Some facial expressions, vocalizations
  - Few opportunities for interaction
    - Minimal participation

Intervention Phase 1
Increasing social participation

- Goal
  - To increase active participation in social interactions with familiar adults
  - To express range of communicative functions
  - To establish the foundations for language learning

Intervention Phase 1

- Intervention departed from traditional AAC interventions
  - Focused on sustained social interaction
    - Not just on needs & wants
  - Redesigned AAC systems to better meet needs and skills of very young child
    - Provided contextual support to support language learning
  - Encouraged language learning through AAC
    - Did not require language learning prior to AAC
    - Used AAC as a medium for learning language

Intervention Phase 1

- Select appropriate contexts to build language and communication skills
  - Interactive / reciprocal
  - Sustainable
  - Meaningful / familiar
  - Motivating for the child
  - Valued by the family
  - Fun!!

Intervention Phase 1

- Examples of social contexts
  - Social games
    - E.g., peek a boo, Who's hiding
  - Singing songs (line by line)
    - E.g., Itsy bitsy spider, Wheels on the Bus, Old McDonald
  - Book reading
    - Brown Bear, Baby faces
  - Play activities
    - Musical instruments

Intervention Phase 1
Ensure access to means to communicate

- Incorporate existing modes
  - E.g., vocalizations, facial expressions, eye gaze
- Introduce AAC to enhance communication
  - Gestures / signs
  - Low tech symbols /Speech generating devices (SGDs)
  - ** Be careful not to overwhelm parents
- Model AAC use in interactions
  - Use sign + speech; aided AAC + speech in all interactions
  - Provide opportunities but do not obligate child to use

Intervention Phase 1

- Design appropriate AAC systems
  - Maximize power of communication & support future language development
  - Maximize appeal
  - Minimize learning demands

Intervention Phase 1
Design appropriate AAC systems

- Maximize power of communication & support future language development
  - Do not externally cap language development through use of AAC systems with limited capacity
  - Expect significant language learning over the first 5 years
    - Expect acquisition of many language concepts
    - Introduce new concepts and contexts for communication regularly
    - Provide numerous models of AAC use in meaningful contexts

Intervention Phase 1
Design appropriate AAC systems

- Enhance appeal
  - Incorporate motivating content
    - Fun interactive play activities
  - Incorporate multiple bright colors
  - Incorporate engaging characters into symbols
  - Incorporate engaging output
    - Library of sound effects

Intervention Phase 1
Design appropriate AAC systems

- Reduce the learning demands of AAC systems
  - Use meaningful and appropriate representations, organizations, and layouts
    - Use visual scene displays (VSD) with very young children
    - A VSD is a digital photo or other image that depicts and represents the child's experiences / activities
    - Language concepts are embedded under "hot spots" in visual scenes

Advantages of VSDs

- VSDs represent familiar events and activities
  - maximize meaningfulness of representations
- Language concepts are presented in context,
  - provide support for understanding & learning
- VSDs organize language schematically
  - matches young children's organizations
- VSDs preserve conceptual & visual relationships between symbols that occur in life
  - preserve the location, proportionality of concepts
- VSDs provide motivating & interesting contexts
  - stimulate interaction

What makes a "good" VSD?

- Visual scene displays for young children should
  - Be meaningful and relevant
  - Represent motivating events /contexts /activities
  - Portray interactive social experiences
  - Provide a rich context for communication
  - Reflect the child's perspective on the event /experience
  - Reflect the child's conceptual development /understanding
  - Be appealing

Intervention Phase 1
Use strategies to promote communication

- Implement AAC in meaningful social contexts in natural environment
  - Involve families / provide informal training & supports
- Model AAC + speech in all interactions
  - Sign + speech; aided AAC + speech
- Wait
  - Provide the opportunity for the child to communicate
- Recognize the child's communication attempts
- Respond to the child
  - Fulfill the child's intent

Intervention Phase 1
Increasing social participation

- Outcomes
  - Used AAC technology on initial introduction once use was modeled
    - Highly motivated to use VSDs during play, book reading, singing, etc
  - Demonstrated significant increases in rate of participation after introduction of AAC
    - Increases of more than 20 times the rates observed at baseline
  - Sustained interactions with others for significantly longer after AAC intervention
    - Many more opportunities to learn language and other skills

Intervention Phase 1
Increasing social participation

- Outcomes continued
  - Learned to participate in a range of interactions
    - Social routines
    - Play activities
    - Not just expression of needs and wants
  - Demonstrated first "words" at 10 months
    - Expressed via sign & aided AAC

Intervention Phase 2
Expanding vocabulary
Extending pragmatic development

- Goals
  - To build a range of semantic concepts
  - To foster development of semantic-syntactic relations
  - To expand range of communicative functions
  - To expand range of partners
    - Peer interactions as a "testing" ground

Intervention Phase 2

- Intervention in motivating social contexts in natural environment
  - Greater involvement in interactive play contexts
    - Playing ball, dolls, farm, cars, blocks, Simon Says
    - More complex books and songs
  - Greater involvement with peers
    - Interactions with younger brother
    - Opportunity to test competencies

Intervention Phase 2

- Expansion of AAC systems to promote more complex communication
  - Multimodal communication
    - Use of speech, signs/ gestures, aided AAC systems
  - Addition of new vocabulary
    - Wide range of concepts
    - New concepts introduced in meaningful contexts
  - Use of various types of displays
    - Ongoing use of VSDs,
    - Introduction of hybrid displays & grid displays
    - Modeling of navigation between displays

Intervention Phase 2

- Scaffolding support to promote communication
  - Models of AAC + speech
  - Wait
    - Provide opportunities for communication
  - Respond to communicative intent
    - Expand and model more complex communication
      - via AAC + speech
  - Have fun!!

Intervention Phase 2

- Outcomes
  - Continued to increase rate of participation
    - Actively engaged in interactions
  - Demonstrated significant increases in vocabulary
    - Acquired a range of semantic concepts
      - AAC provided a powerful visual support to facilitate language learning
      - AAC provided a means to independently explore language
    - Learned to combine concepts to communicate more complex meaning

Intervention Phase 2

- Outcomes
  - Used a range of means to communicate
    - Speech, gestures /signs, aided AAC
    - Use of AAC enhanced communication and language development at early age
    - Use of AAC did NOT inhibit speech development

Intervention Phase 2

- Outcomes
  - Learned to use range of aided AAC displays
    - VSDs
    - Hybrid displays
    - Grid displays
  - Learned to use navigational tools
    - Menu
    - Forward and back arrows to change pages
    - Approximately 3,000 buttons

Intervention Phase 2

- Outcomes
  - Used AAC systems
    - With parents and older sisters to communicate, learn new concepts, and play
    - With other children as contexts for interaction
      - Shared books, singing, play activities
    - By self for play and learning

Case #2

- 25 month old boy
- Cerebral palsy – severe motor impairment
- Tracheotomy
- Baseline
  - No vocalizations, gestures, or signs
  - Uses <25 digital photos of toys
  - Expresses requests for objects only
    - Reaches toward toy or photo if offered
  - Participates minimally
    - Expresses 1 concept or less per 20 minute interaction

Intervention Stage 1
Increasing communicative turns

- Goal
  - To increase active participation in social interactions with familiar adults
  - To increase communicative turns
    - Provide more opportunities to learn language

Introduce appropriate AAC systems

- Light tech symbols
  - Meaningful & appealing representations of concepts
    - Digital photos, scanned images, color line drawings
  - Covered in contact paper & backed with velcro
  - Taught in meaningful contexts
    - Symbol paired with the actual referents

- Speech generating device (SGD)
  - Mercury with Speaking Dynamically software
  - Accessed through direct selection with both hands
  - Access to 1-2 symbols per page initially
    - Gradually increase number of symbols as access improved
  - Visual scene layouts
    - Meaningful & appealing representations
  - With digitized speech output, sound effects, music, etc

Work with parents to enhance participation

- Identify opportunities for communication
  - Infuse into familiar, meaningful, motivating, social activities
  - Opportunities to sustain social interaction
- Model use of aided AAC plus speech
  - Speech + light tech symbols; Speech +SGD
- Provide scaffolding support in AAC use
  - Locate appropriate light tech symbols to offer choices
  - Help locate appropriate pages in SGD
- Recognize and respond to child's communicative attempts
  - Fulfill communicative intent
  - Expand and model more complex messages using aided AAC
- Have fun!

Results after 4 weeks

- After 4 weeks of intervention (age: 26 months)
  - Much more active participant in interaction
    - Takes approximately 20 turns per 20 minute interaction
    - Increase of approximately 20 x rate of baseline
  - Expresses >180 words via light tech & high tech AAC
    - Increased vocabulary by >5 words per day
  - Communicates in single word telegraphic messages
  - Expresses 4-5 different semantic relations
    - agent, action, object, locative, attribute/adverbial

Intervention Stage 2
Developing semantic concepts

- Goals
  - To continue active involvement in social interactions with familiar adults
  - To expand expressive vocabulary to communicate more diverse meaning
  - To teach question "What's that?" to provide some control over vocabulary acquisition

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Develop appropriate AAC systems

- Light tech symbols and SGD
  - Ongoing expansion of vocabulary
    - Addition of a wide range of concepts
    - Introduction of abstract concepts
    - Use of meaningful representations
  - Use of a schematic organization
    - Vocabulary grouped on pages according to event experiences
  - Introduce grid display as well as visual scenes
  - Improved access
    - Selects from 6 symbols

Work with parents

- Set up numerous opportunities for communication
- Recognize and respond to communicative attempts
- Model use of aided AAC
  - Model known concepts as well as new ones
  - Expand on child's messages
- Teach new concepts
  - Link new symbol to the concept directly
  - Demonstrate concept
  - Model use

- Provide scaffolding support in AAC use
  - Help locate appropriate pages in VOCA as required
  - Teach organizational system
    - Organize vocabulary according to meaningful events
    - Use appropriate menu symbols

Results after 12 weeks

- After 12 weeks of intervention (age: 28 months)
  - Participates actively in interactions with familiar adults
    - Expresses >48 concepts per 20 minute interaction
    - Increase of approximately 50 x rate of baseline
  - Expresses >480 words via light tech & high tech AAC
    - Increased vocabulary by >5 words per day
  - Expresses wide range of semantic relations
    - agent, action, object, attribute/adverbial, locative, demonstrative, possessor, quantifier, instrument, questions, etc.
  - Communicates in 1-2 word messages
    - Beginning to combine concepts

Intervention - Stage 3
Learning syntax and morphology

- Goals
  - To continue active involvement in social interactions with familiar adults
  - To take turns with peers with adult scaffolding
  - To continue to expand expressive vocabulary
    - e.g., question words, etc
    - Read, read, read
  - To encourage communication of more complex, novel meanings by combining symbols
  - To introduce early morphological structures to specify meaning

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Learning the form of language

- Begin to introduce more complex forms of language
  - Introduce syntax/ morphology
    - Introduce traditional orthography as appropriate
- Model AAC + speech
  - Build up sentences
  - Break down sentences
  - Use message bar with SGD to provide visual /auditory feedback
- Teach in context; demonstrate appropriate use
  - Explain rules as appropriate
- Expect use only in contexts where obligated
  - E.g., "writing" activities / publishing books

Results

- After 12 months of intervention (age: 37 months)
  - Expresses >1,000 words via light tech and high tech AAC
    - Continues to increase vocabulary by >5 words per day
  - Active participant in interactions
    - Expresses approx 50 concepts per 20 minute interaction
    - Increase of approximately 50 x rate of baseline
  - Expresses wide range of semantic relations
    - agent, action, object, locative, demonstrative, possessor, quantifier, instrument, questions, etc.
  - Communicates in 1-4 word messages
    - Understands use of many grammatical markers
    - Beginning to use some grammatical markers

Ongoing intervention challenges

- Seating and positioning / access
- Balancing priorities
- Managing the programming demands
- Finding an appropriate "voice"

Intervention Stage 4
Phonological awareness / literacy

- Goals
  - To participate actively in social interactions
    - with familiar adults
    - with peers
  - To continue to expand expressive vocabulary
  - To continue to develop syntax and morphology
  - To teach phonological awareness skills and conventional literacy skills

AAC systems

- AAC systems
  - Expand AAC systems to support literacy development
  - Provide access to alphabet and words
    - Introduce alphabet board
    - Access to letters and sounds on SGD
      - Speech output letter sounds not names

Literacy instruction

- Instruction based on recommendations of National Reading Panel (2000)
  - Reading to child & talking about texts
  - Phonological awareness skills
    - Sound blending skills
    - Phoneme segmentation skills
  - Letter-sound correspondences
  - Decoding skills
  - Sight word recognition skills
  - Reading comprehension strategies
  - Early writing skills

Literacy instruction

- Instructional procedures
  - Direct instruction in basic skills
    - Model the skill
    - Provide guided practice
    - Provide independent practice with feedback
  - Frequent opportunities to apply skills during meaningful, motivating literacy activities

Instruction in sound blending

- Goal
  - The student will blend 3 target phonemes presented orally in sequence (with each phoneme extended 1-2 seconds), determine the target word, and then point to the correct AAC symbol for the target word

Instruction in phoneme segmentation

- Goal
  - The student will match a target phoneme presented orally to the AAC symbol of a word that starts with the target phoneme

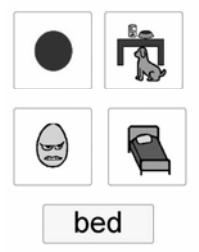## Instruction in letter-sound correspondences

- Goal
  - The student will match a target phoneme presented orally to the letter that represents the target phoneme

b	m
t	o

Instruction in single word decoding

- Goal
  - The student will decode a single word presented in writing and match the word to the correct AAC symbol

bed

Applying decoding skills during shared book reading

- Provide opportunities to apply decoding skills during shared reading
  - Highlight target words
  - Read sentence out loud / track words with finger
  - Pause at highlighted target word
  - Child decodes target word and then selects AAC symbol from communication display or VOCA

Results

- After 17 months of intervention (age: 42 months)
  - Acquiring conventional literacy skills
    - phonological awareness skills
      - initial phoneme segmentation >90% accuracy
      - sound blending >90% accuracy
    - letter-sound correspondences >90% accuracy
    - decoding single words (cvc) in isolation >80% accuracy
    - decoding during shared reading >80% accuracy

Ongoing literacy instruction

- Read read read!!
  - Talk about stories
- Expand decoding /sight word recognition skills
  - Decoding regular cvc, cvcc, ccvc words
  - Recognizing sight words
    - irregular frequently occurring words
  - Decoding words with long vowel /silent e
- Teaching writing skills
  - Writing stories

Building reading comprehension

- Reading comprehension is a complex process that requires the child to
  - track through sentence from left to right
  - decode or recognize by sight each word in sequence
  - access the meaning of the words
  - process all words in sequence to derive meaning of sentence (or longer text)
  - relate meaning to prior knowledge /experience to comprehend text

Building reading comprehension

- Goal of reading instruction is to build comprehension of texts
- Introduction of reading comprehension strategies
  - Summarization strategy
  - Generating questions
  - Answering questions

Case #2 –5 years old

- Outcomes
  - Enters Kindergarten as a reader and writer
  - Fully included in regular education class
  - Full time assistance of aide
  - Uses light tech symbols and Mercury with SD Pro as primary means of communication
  - Literacy skills exceed those of most typical peers

Case #3

- 15 month old boy
- Down Syndrome, otitis media
- Lives at home with mom and dad (and baby sister)
- Baseline
  - Says <5 spoken word approximations
  - Has < 10 signs – mostly animal concepts
  - Participates minimally
    - Expresses <5 concepts in 20 minutes of interaction
  - Only expresses object concepts
  - Labels pictures upon request

Intervention Stage 1
Increasing communicative turns

- Goal
  - To increase active participation in social interactions with familiar adults
  - To increase communicative turns

Introduce appropriate AAC systems

- Speech approximations
- Signs /gestures
- Light tech symbols
  - Digital photos, scanned images, color line drawings
- Speech generating device
  - Gemini with Speaking Dynamically Pro software
  - Digital photos, scanned images, color line drawings
  - Accessed through direct selection with both hands – full hand
  - Visual scenes with hotspots
  - Digitized speech output, sound effects, music etc
  - Access to 1-2 symbols per page

Working with parents to enhance participation

- Identify opportunities for communication
  - Infused into meaningful, motivating, social activities
  - Opportunities to sustain social interaction
- Model use of AAC plus speech
  - Signs + speech
  - Aided AAC + speech
- Provide scaffolding support in use of aided AAC
  - Help locate appropriate pages in SGD
  - Position SGD to support communication
- Wait
  - Allow opportunity to take turns independently

- Respond to communicative attempts
  - Fulfill intent
- Expand and model more complex messages using aided AAC
  - Speech + signs
  - Speech + aided AAC

Case #3 – 17 months old

- After 4 weeks of intervention (age: 17 months)
  - Active participant in interactions with familiar adult
    - Takes 90-150 turns per 20 minute interaction
    - Rate of 5-7 turns per minute
    - Increase of approximately 25 x rate of baseline
  - Acquired >150 concepts
  - Expresses a total of 90-150 concepts (35-45 different concepts) in 20 minutes of interaction
    - Vocalizations / Speech approximations (10%)
    - Signs /gestures (40-60%)
    - Aided AAC (35-50%)

Case #3 – 20 months old

- After 4 months of intervention
  - Active participant in interactions with familiar adult
    - Takes 160-200 turns per 20 minute interaction
    - Rate of 8-10 turns per minute
  - Acquired >200 concepts
  - Expresses a total of 90-120 concepts (3-40 different concepts) in 20 minutes of interaction
    - Vocalizations / Speech approximations (10%)
    - Signs /gestures (30%)
    - Aided AAC (60%)

Intervention Stage 2
Developing semantic concepts

- Goals
  - To continue active involvement in social interactions with familiar adults
    - Express needs & wants, social interaction, joint attention
  - To expand receptive and expressive vocabulary
    - Reflect interests
    - Include a wide range of concepts
    - Not just nouns!
  - To teach questions

Case #3- 23-25 months

- After 7-9 months of intervention (age: 23-25 months)
  - Continues to participate actively in interactions with familiar adults
    - Expresses >100-120 turns per 20 minute interaction
  - Continues to use speech, signs, and aided AAC
  - Acquired >700 concepts
  - Expresses 80-120 concepts (30-45 different concepts) in 20 minutes of interaction
  - Expands range of semantic relations
    - agent, action, object, entity, adverbial, recurrence, locative, greetings, demonstrative, quantifier, question
  - Communicates in single word telegraphic messages
  - Navigates aided AAC system with some assistance
    - Uses menu button
    - Back and forward arrows

Intervention - Stage 3
Building great complexity

- Goals
  - To continue active involvement in social interactions with familiar adults
  - To continue to expand expressive vocabulary
  - To encourage communication of more complex meanings though combinations of symbols /speech

Intervention

- AAC systems
  - Continued use of visual scene layouts
  - Increased use of grid layouts as well
    - Use of semantic- syntactic organization
  - Addition of message bar
  - Introduction of early preschool concepts
    - Numbers
    - Letters and sounds

Case #3 – 2 years 9 months

- After 18 months of intervention
  - Continues to participate actively in interactions
    - Expresses approx 200 turns per 20 minute interaction
    - Rate of 10 turns per minute
  - Multimodal communication / Increased use of speech
    - Speech (26%)
    - Signs/ gestures (25%)
    - Aided AAC (48%)

- Acquired >2,000 words
- Expresses 45-80 different concepts in 20 minutes of interaction
- Expresses wide range of semantic relations
  - agent, action, object, entity, attribute, adverbial, recurrence, locative, greetings, demonstrative, quantifier, question, affirmation, negation
- Typically uses single words
  - Increased use of 2-3 word combinations
- Navigates aided AAC system independently
  - >3,500 buttons
  - Menu buttons – 3-4 levels
  - Back and forward arrows
  - Message bar functions – backspace

Intervention Stage 4
Phonological awareness / literacy

- Goal
  - To continue active involvement in social interactions
    - with familiar adults
    - with peers
  - To continue to expand expressive vocabulary
  - To continue to develop syntax and morphology
  - To teach phonological awareness /literacy skills
    - To use literacy to build language skills

AAC systems

- AAC systems
  - Expand to support literacy instruction
  - Provide access to alphabet on high tech system
    - Speech output letter sounds not names
  - Introduction to standard keyboard

Stage 4
Literacy instruction

- Instruction included
  - Reading to child & talking about texts
  - Phonological awareness skills
    - Sound blending skills
    - Phoneme segmentation skills
  - Letter-sound correspondences
  - Decoding skills
  - Sight word recognition skills
  - Reading comprehension strategies
  - Early writing skills

Literacy instruction

- Instructional procedures
  - Direct instruction in basic skills
    - Model the skill
    - Provide guided practice
    - Provide independent practice with feedback
  - Frequent opportunities to apply skills in meaningful, motivating literacy activities

Case #3 – 5 years old

- Outcomes
  - Continues to participate actively in interactions
  - Relies on speech as primary means of communication
    - Augments with signs & aided AAC as required to clarify
  - Acquired thousands of words
    - Expresses wide range of semantic relations
  - Communicates in short sentences
  - Literacy used to enhance language skills
    - Acquisition of vocabulary
    - Learning of syntax/ morphology
    - Speech production

Case #3 – 5 years old

- Literacy skills
  - Demonstrates phonological awareness skills
    - Sound blending
    - Phoneme segmentation
  - Knows all letter-sound correspondences
  - Decodes regular cvc words
  - Applies decoding skills during shared book reading
  - Reads simple books independently
  - Types simple regular words / short sentences
  - Enters Kindergarten as a reader

Development of language & literacy skills

- During the first 5 years of life, typically developing children make a remarkable transition
  - from birth
    - preintentional and presymbolic
  - to the school years
    - express a wide range of intents with a wide range of partners
    - know a wide range of vocabulary concepts
    - generate complex sentences to communicate thoughts & feelings
    - begin to learn conventional literacy skills

Building language and literacy skills with children with CCN

- With appropriate evidence-based AAC intervention, it is possible to build language and literacy skills with young children with complex communication needs
  - Pragmatic skills
  - Semantic skills
  - Syntactic /morphological skills
  - Phonological awareness /literacy skills

The challenge

- The challenge is to raise the bar
  - To increase expectations
  - To implement evidence-based AAC intervention with children with CCN from the earliest ages
  - To maximize results
- The challenge is to ensure
  - That the "possible" becomes reality for all children with CCN