Communication Skill Development
Through Visual Systems and New iDevice Technology

Lorraine Paciocco BA,CCYW, Manager of Specialized Services - CL Algoma
Lorraine Otto, M.Sc., Speech-Language Pathologist Reg. CASLPO
Doug Daley, M.A., Speech-Language Pathologist Reg. CASLPO
Dawne Austin-Ryan, DSW – CL Algoma
Pam Carter, DSW – CL Algoma

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INTRODUCTIONS PLEASE...

• Who we are and our experience to date with low and high-tech AAC aids.
  • lotto@dscwr.com
  • ddaley@handstfhn.ca

• Sample –
  • Who are you?
  • Where do you work; and
  • What is your experience with such aids.

How are YOU communicating?

• Picture Exchange Communication System?
• iDevices – iPad, P2G?
How People Communicate

- speech
- sign language
- gestures
- body language
- tone of voice
- pictures
- behaviour

Devices are just one way of communicating

Why People Communicate

- Request - wants and needs, ask question
- Protest -
- Social interaction - greeting
- Information sharing - comment, answer question
- Social closeness -

Characteristics of People with Intellectual Disabilities Relevant to Use of Visual Systems:

**WEAKNESSES:** May experience…

- Difficulty paying attention/retaining spoken word
- Difficulty with motor co-ordination
- Difficulty making associations between spoken word and an object/action
- Difficulty speaking clearly
Characteristics of People with Intellectual Disabilities Relevant to Use of Visual Systems

**STRENGTHS**: May be able to …

- Do basic motor actions
- Retain visually presented information
- Link symbols together to augment poor speech

**Behaviour is Often Related to Communication**

Because the client:
- does not understand his/her environment
- pays attention to different aspects
- Thought process and reasoning processes are different
- has difficulty beginning or ending activities, or with transitions and change

*Often the solution to the behaviour is to improve comprehension*
Many of us are Visual Learners

- Visual Tools: we all use them

Hierarchy for Symbols
(easiest to most difficult)
- objects
- colour photographs
- black & white photos
- miniature objects
- black & white line symbols (PCS)
- written word

What is Boardmaker?
- Software for making Picture Communication Symbols (PCS)
- $399
- www.mayer-johnson.ca/Boardmaker
Symbols vs. Photos:
- Picture Communication Symbols: are the standard, often used in schools
- Boardmaker software program
- Photos: Google images are free and realistic

Schedules – Routines
-- give information --
- Knowing and understanding what will happen next can reduce frustration and behaviours
- schedules help redirect the client back to the activity
Calendars
-- give information --

- Help organize and understand sequence, and time concepts (yesterday, today, tomorrow)
- Reduces behaviours for clients who resist change or experience difficulty when they don’t understand what is happening

Could Include:
- Special events, visitors, appointments
- Which days are school, work day or home day
Choice Boards

- Provides immediate reinforcement
- Indicates what is available
- Promotes feeling of control and responsibility
- Reduces frustration
- Gives adult control while offering appropriate choices
- A no sign clarifies what is not available

Choice Board Sample:

<table>
<thead>
<tr>
<th>Free Time Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board games</td>
</tr>
<tr>
<td>Computer</td>
</tr>
<tr>
<td>Drawing</td>
</tr>
<tr>
<td>Painting</td>
</tr>
<tr>
<td>Reading</td>
</tr>
<tr>
<td>Soccer</td>
</tr>
<tr>
<td>Ride bike</td>
</tr>
</tbody>
</table>
Behaviour Choice Board:

- Provides options for appropriate behaviour responses
- Allows person to feel control over his/her behaviour
- Promotes self-regulation

Behaviour Choice Board Sample

First / Then Boards

- Preferred activity follows a non-preferred activity
- Motivation to complete an adult-directed task while being aware of the activity that will follow
- Clarifies consistent expectations
- Can act as a reinforcement or reward
**First / Then Sample**

FIRST: snack

THEN: computer

**Visual Reminder**

- Help client follow directions and stay focused

**Hallway Rules**

- Look at the person
- Smile
- Say Hi!
- Keep walking
Social Stories: provide visual info

A Social Story™ describes a situation, skill, or concept in terms of relevant social cues, perspectives, and common responses in a specifically defined style and format. The goal of a Social Story™ is to share accurate social information in a patient and reassuring manner that is easily understood by its audience.
**TALKING MATS.COM**

- **Talking Mats** is an established communication tool, which uses a mat with symbols attached as the basis for communication. It is designed to help people with communication difficulties to think about issues discussed with them, and provide them with a way to effectively express themselves in a visual way that can be easily recorded. Talking Mats supports adults and children with a range of communication difficulties and helps people to understand, consider and express their views. It can be used with people with different abilities, from different cultures and living in different situations.

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**Picture Exchange Communication System - Pecs**

- Use only if there is long term commitment between someone who has experience with it and those who might implement it daily
- Often may need to be modified to meet time constraints and staffing needs
- Is an excellent teaching tool for building "functional" communication
- Excellent approach that builds spontaneous initiative

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**PECS VIDEO DEMONSTRATION**

(Phase One – Making a Request)

YouTube – Autism Teaching Tools: Picture Exchange PECS
http://www.youtube.com/watch?v=ezdhezar8
Pecs- Case Study

- 58-yr-old man with Down Syndrome
- Institutionalized till age 53 (received some exposure to PECS)
- Passive, compliant, slow to respond, non-verbal/min. sign
- Would go and stand beside staff as indicator of need, and staff would have to guess what he wanted
- Began PECS staff training May ’09 – May ’10 (1-2/month review); then 1/1-2/mo. till Feb. ’11
- Able at height of learning to spontaneously go to 3-page symbol binder, correctly find desired symbol, place it on a sentence strip along with symbol for “I want” which he would go and hand over to staff.

Pecs- Case Study

- He was using PECS for leisure and food requests, at church fellowship hour and coffee shops
- Challenges:
  - Vision perception deteriorated = afraid to walk outside
  - Significantly overweight
  - Swelling of left ankle
  - Peer commanding excess staff energy due to behaviour
  - Staff querying need to ask for available items

Person’s Development

- Has learned that he can make a specific request
- Has learned he has a choice
- More alert, quicker to respond
- Has learned to assert his preferences – Peach juice story

Communication Partner’s Development

- Evolved from giving and not expecting to believe in ability to assert his interest/need
- Has learned to offer choices as person has showed that he can discriminate between pictures
- “I am more confident that I am supporting him in a way that he likes.”
- Feel person is more efficient in making his needs known
Picture Exchange Communication System - Pecs

- It is a system based on ABA principles which have been proved to be evidence-based effective
- It promotes a person's initiative to communicate
- It helps a person focus on the interaction
- The approach helped me become better organized and structured in my teaching people to be able to make requests and comments
- It provides a solid basis from which to help staff learn to promote language learning
- The approach once learned is adaptable to use with any low high-tech aid
- It is worth the investment of time to study its approach

Advanced Low-Tech Systems

Flip and Talk

- Talk on the go! An on-the-go communicator that straps to your waist. Simply flip through the four icon holders to select your desired message then lightly squeeze the icon and your pre-recorded message plays. Icon holders can hold several paper icons or photos.
  - 12 levels with recordable level announcer
  - 60 5-second messages
  - 300 seconds of total recording time
  - Volume control
  - Excellent sound quality
  - Adjustable belt to fit most sizes

Waist Unit Size: 5”L x 1”W x 1”H; Icon Package Size: 4”L x 4”W x 1/2”H. Requires 2 AAA Batteries.
Weight: ¾ lb.
Cost $264.95 + S. & H.
Bridges Canada
Low-Tech Electronic AAC Systems

- **Place mat Communicator**
  Communicate at meal time! Our new unique communicator is perfect for teaching language skills, requesting needs and making choices. Great for using at meal time to make food selections or to comment on the meal. The communicator is covered in soft clear protective plastic and has room for a plate or bowl and utensils. Simply raise the plastic and slide your six icons into the attached icon holders, record your messages and you are ready to go. Features:
  - 288 seconds total recording time
  - Records 6 messages per level
  - 6 levels
  - 6 seconds per message
  - Easy single message recording
  - On/Off switch

Size: 20”L x 4 1/2”H x 19”W. Requires: 4 AA Batteries. Weight: 4 lbs. Cost: $319.95 + S. & H. Bridges, Canada

Low-Tech Electronic AAC Systems

**BIG MAC**
- $119
- Communication Aid for those who can access a larger target area. 5" activation surface. Easy to record, crystal-clear voice quality.

**Go Talk 9**
- $179
- Store up to 45 messages (9 keys, each 1 3/4" x 2 1/4", and five recording levels).
- Three ‘core messages’ stay the same on each level

Video of low-tech device here

- Go Talk 9 demo on YouTube: [http://www.youtube.com/watch?v=il0Afacbwio&feature=related](http://www.youtube.com/watch?v=il0Afacbwio&feature=related)
Where do I get low-tech devices?:

- www.bridges-canada.com
- www.mayer-johnson.ca

Challenges with Low-Tech Communication Methods

NON-ELECTRONIC:
- Creation/maintenance of materials
- Time delay in creation-use of symbols
- Difficulty in learning how to use/problem-solve use

LOW-TECH ELECTRONIC:
- Having to re-record message
- Creation and maintenance of symbols
- Require learning on how to program/charge/problem solve

HIGH-TECH DEVICES

Speech Generating Devices
(SGD)
Communication Devices Keep Evolving:

Dynavox Maestro

• Comes standard with a camera, Wi-Fi and Bluetooth.
• For those who are learning and/or who have mastered language, literacy and communication skills.
• Speakers that can be heard in a crowded room.
• Can use the touch screen or alternate access methods (e.g. switch scanning or a headmouse)

http://ca.dynavoxtech.com

Tango

• Pre-loaded phrases
• Built-in camera
• Simplify message composition and selection with fewer buttons
• Features the Voice Morphing Technology which can alter the pitch of voice to make it seem like a child (or adult) is talking.

http://ca.dynavoxtech.com

And then came the Apple iDevices

iPad
iPod
iPhone
And with the iDevices...

- Came amazing Apps for communication and education...
- An App is a shortened and isolated piece of software

Custom Boards App:

- $19.99
- 11 thousand built-in symbols from the Smarty Symbols library
- “A research study by Wilkinson, Carlin, & Jagaroo, 2006, found that children are faster and more accurate in learning symbols when the symbols had unique internal colors; therefore users are also able to change background colors on each individual cell on Custom Boards.”
- If you do not own an Airprinting-ready printer, you can e-mail the board to yourself. The e-mail will contain a .pdf attachment that you can open on your computer, share with others or print from any printer.

PREREQUISITES FOR LOW-TECH COMMUNICATION DISPLAYS
Prerequisites

- Vision
  - Glasses
    - Near or farsighted
  - Peripheral Vision
    - Optimum location for presentation and placement of symbols/pictures
- Colour Perception
  - Strategies to make symbols stand out.
    - Size/colour of print and object
    - Change background colour and/or picture colour
  - Pictures vs. Symbols
- Hearing
  - Tone, pitch and rate of speech
- Medication

John case study re: colour perception

- 19-year old
- Not able to leave home due to health (home schooled)
- Has computer for games/education
- Some difficulty with fine motor skills
- Mostly communicates by vocalizations, gestures and his behaviours

Customization of John’s Proloquo

Through assessment of skills we found that John is more successful when:

- objects are presented from the left
- objects are placed in the peripherals of his vision rather than the center
- we use pictures of the objects, and use fewer pictures
- we adjusted the colour to a red background with a black print
- we used a male's voice at a lower tone range
- options button is locked out
Prerequisites:

**COGNITIVE:**
- Demonstrate stimulus-response, means-ends understanding (Turn on devise, press a cell, swipe)
- Ability to focus
- Ability to scan

**MOTOR:**
- Ability to isolate a motor action
- Ability to execute a motor action consistently
- Ability to swipe in two directions, spread at least two digits

**UNDERSTAND/RECEPTIVE LANGUAGE:**
- Associate the spoken/visual symbol with an object/action

**COMMUNICATE/EXPRESSIVE LANGUAGE:**
- Desire to share information (Make request, comment, deny, etc.)

**BEHAVIOUR:**
- Need to be interested in communicating with others
- Need to be somewhat receptive to using a device
- Not have a history of throwing things when upset
PREREQUISITES FOR HIGH-TECH DEVICES

Assessment for Symbol Use

- Test of Aided Communication Symbol Performance
- Distinguish one symbol from another
- Size of symbols
- Sizes of cells
- Number of cells per page
- Grammatical Encoding
- Categorization

Screening:

- What does the individual understand?

<table>
<thead>
<tr>
<th>Names of people</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names of objects</td>
<td>✓</td>
</tr>
<tr>
<td>One step commands</td>
<td>✓</td>
</tr>
<tr>
<td>Two step commands</td>
<td>✓</td>
</tr>
<tr>
<td>Pictures to understand</td>
<td>✓</td>
</tr>
<tr>
<td>*Routines</td>
<td>✓</td>
</tr>
<tr>
<td>*expectations</td>
<td>✓</td>
</tr>
<tr>
<td>*instructions</td>
<td>✓</td>
</tr>
</tbody>
</table>
Screening:
Does the client understand?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause and Effect</td>
<td>✔</td>
</tr>
<tr>
<td>Turn taking</td>
<td>✔</td>
</tr>
<tr>
<td>Waiting for a turn</td>
<td>✔</td>
</tr>
</tbody>
</table>

Screening:
Can the client read?
What level?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter recognition</td>
<td>✔</td>
</tr>
<tr>
<td>Environmental print</td>
<td>✔</td>
</tr>
<tr>
<td>(McDonald's, brand names)</td>
<td>✔</td>
</tr>
<tr>
<td>Single words</td>
<td>✔</td>
</tr>
<tr>
<td>Phrases, more</td>
<td>✔</td>
</tr>
</tbody>
</table>

Screening:
Current augmentative communication:
Is the client already using a symbol system – PCS or PECS:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>What AAC device is client currently using</td>
<td>✔</td>
</tr>
<tr>
<td>How many vocabulary items on device</td>
<td>✔</td>
</tr>
<tr>
<td>Size of symbols/letters</td>
<td>✔</td>
</tr>
<tr>
<td>How access current system</td>
<td>✔</td>
</tr>
<tr>
<td>Success/difficulties with current system.</td>
<td>✔</td>
</tr>
<tr>
<td>Can client use a communication book, PCS or PECS?</td>
<td>✔</td>
</tr>
</tbody>
</table>
Prerequisite Apps: sample Apps client should be able to use

- Bubble popper - free
  - Teaches direct selection
  - dexterity
- idragpaper - free
  - Teaches scrolling

Prerequisite Apps: sample Apps client should be able to use

- Smack Gugl - 99 cents
  - Try to touch the Gugl as it pops up
  - Teaches:
    - Touching targets
    - dexterity
- Art of Glow - free
  - Teaches cause & effect – touch the screen, and lights appear where finger touches

App to Help Assess: TapToTalk

- Free app with 6 categories
- Works on a variety of devices.
- TapToTalk Designer includes a library of over 2,000 pictures. You can add your own pictures, photos and sounds. You can even record your own voice.
- $99.95 for one year or $179.95 “forever”
- Website: www.taptotalk.com
Mobile Technology

- **Preparation**: What is the rationale for using a mobile device with the child?
- **Participants**: What is the child's age and developmental level? Who will they use device with?
- **Parameters**: How much time will be spent using the device and where?
- **Purpose**: How will a specific App meet the child's needs?
- **Potential**: How will you extend the learning gained from using an App to real life experiences?

Are We Putting the Cart before the Horse!?!?

There are many positive features about the use of iDevices; YET we MUST proceed with caution, as **not** every one of the people we serve is capable of using such a "platform" for effective communication. This may not be the best vehicle for them to communicate.

What? The iDevice doesn't seem to be appropriate...now what?
Goals if Skills Insufficient to Use iDevices

- Remember the “stuff” from this morning!
  - low-tech visuals
  - basic choice making
  - PECS
  - awareness and pointing
  - Prerequisite Apps

What else can I use iDevice for?

- Some clients do not have skills to use an iDevice as a communication tool
- Then…use as an educational tool or to help comprehension (remember this morning's visuals!!)
  - Choice making (Choiceworks app)
  - Transition
  - Schedules (Visual Routine, Visual Cue apps)
  - Timer (Time Timer app), etc.......
  - Use iDevice for another purpose such as music

Don’t rush out to get technology!

- Person-to-person interaction is still often the best
- Individualized treatment goals rather than the latest gadget on the market
- Determine needs, strengths and skills
Review of Morning Content...

- How/why do people communicate?
- Why are visuals so crucial for the I.D. population
- Review a sample of low and high-tech forms of AAC
- Prerequisite abilities required to use AAC
- Considerations before implementing mobile technologies
- Cautions in choosing to use iDevices

Join us this afternoon as we further explore the use of visuals and high-tech communication aids

Questions

?