Autism: Integrating AAC and Visual Language

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Introduction

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Monarch Center for Autism
http://www.monarchcenterforautism.org

A Division of Bellefaire JCB
22001 Fairmount Boulevard
Cleveland, Ohio 44118
Overview of Monarch

- Non-profit charter school, residential program, and adult program in Shaker Heights, Ohio
- Started in 2000 with 11 students with autism
- We have 17 SLPs on staff, most work full-time
- Caseloads are small (i.e., 6-10 students)
- Partnered with Dr. Howard Shane and colleagues from Boston's Children's Hospital in 2003

Objectives

1. Be able to compare/contrast at least 6 current communication apps and devices
2. Be able to identify the 12 steps in the AAC Evaluation process
3. Replicate three real ways to embed visual language during the school day

OBJ 1:

Be able to compare/contrast current communication apps/devices
AAC Systems Covered

**Apps**
1. Tobii Sono Flex  
2. Proloquo2Go  
3. Touch Chat  
4. AutisMate

**Devices**
1. DynaVox  
2. Prentke Romich  
3. NOVA chat

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**Sono Flex**

*By Saltillo*

**Distinguishing Features**
- Uses a navigational strip
- Offers “contexts” in pre-made boards
- Has four “frequent” placeholders
- Buttons are largely organized by pages
- Has a “find” feature

**Misc. Details**
- Swipe for vocabulary
- Uses Fitzgerald Key
- Color Coding
Sono Flex
- No variable cell sizes for consistent motor planning
- No variable colors for part of speech consistency
- Fixed location of "Quick Phrases" across package
- Offers verb conjugation
- Offers a "lite" version for free

AutisMate
- Incorporates visual schedules
- Embeds social stories
- Has video models
- Scene photographs form the basis of the system
- Uses GPS to present scenes
- Allows different selection options for buttons

AutisMate
- DISTINGUISHING FEATURES
  - Incorporates visual schedules
  - Embeds social stories
  - Has video models
  - Scene photographs form the basis of the system
  - Uses GPS to present scenes
  - Allows different selection options for buttons
- Misc. Details
  - Everything is customizable
  - Has optional add-on items to be purchased
  - Requires a lot of camera usage
**AutisMate**  
By SpecialNeedsWare, LLC  
- Simple to program  
- Incorporates many needs into one app  
- Concrete communication  
- Video models can be embedded  
- Incorporates visual cues within its features  
- Great built-in tutorial  
- Slow  
- All of the glitches haven't been worked out  
- Poor grammar  
- Requires extensive programming  
- Limited to the iPad for good visibility

**TouchChat**  
By Saltillo  
- Bold color coding  
- Offers scenes with hot spots  
- Ability to play music/videos  
- Links to social media  
- Tilt feature for extremely quiet/noisy environments  
- A lite version is available without sound/speech  
- Uses Fitzgered Key Color Coding

**DISTINGUISHING FEATURES**

- Bold color coding  
- Offers scenes with hot spots  
- Ability to play music/videos  
- Links to social media  
- Tilt feature for extremely quiet/noisy environments
**TouchChat**

- Multiple vocabulary sets included
- Dwell time and button release is adjustable
- Options to expand vocabulary. Variable grid/button size
- Bold colors
- Can easily move buttons
- Swipe is not required

- Virtual scenes are limited
- Part of speech color coding is not simulated into the programming
- Built-in "Back" button is small

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**Proloquo2Go**

- Many voice options available
- Has ExpressivePower for natural voice intonations for some common phrases
- Has the ability to prioritize button access

Misc. Details

- Uses Fitzgerald Key for color coding
- Has been around the longest
DynaVox Symbol Sets
1. DynaSyms and DynaSyms Classic
2. InterAACT symbol set
3. Picture Communication Symbols (PCS)

DynaVox Language System: InterAACT
- Focus on age of user
- Environments
- User ability

The DynaVox Compass Software
- Available on the new DynaVox T10
- Provides access to the cloud-based portal myDynaVox for support
- Editing Software allows you to customize communication pages and share them using a tablet
Dynavox T 10: Pros & Cons

**Pros**
- Meets communication needs as user's ability improves
- Compass software allows entire team to share and create pages
- Small and durable
- Easy to edit buttons quickly

**Cons**
- Price and maintenance
- Time consuming to find the framework/structure appropriate for communicator
- Small buttons
- Complex layout

Prentke Romich Company

Accent 800 & Accent 800-D
Accent 1000
Accent 1200

PRC symbols
- Minspeak Icons
  - Small pictures
  - Multiple meanings
  - Used in sequences
- Theory
  - User learns rules and patterns of combining symbols
  - Capitalizes on LAMP
- PCS symbols also available
**PRC Language System: Unity**

- Focus on CORE words rather than FRINGE words
- CORE words are always visible on the first screen
- Location of CORE words is always the same

**PRC: Pros & Cons**

**PROS**
- Apps such as Words for Life and Language Lab available to help teach
- iShare PRC can be used to upload and share pages
- CORE vocabulary is always in same location and visible on first screen

**CONS**
- Cognitive ability to learn the rules and patterns needed to use UNITY effectively
- Training for family and staff can be time consuming
- Difficult to program and customize

**Saltillo**

NOVA chat 5
NOVA chat 7
NOVA chat 10
Saltillo Symbol Sets

Symbol Stix
- pain
- classroom
- brush teeth

PCS
- swimming
- fruit break
- lunch
- juice time

Saltillo language system: WordPower
- Combination of core vocabulary, spelling, and word prediction
- Core words are categorized, color-coded, and alphabetized
- WordPower also designed for PRC devices

Saltillo: Pros & Cons

PROS
- Grammar options
- Family-friendly
- Long battery life
- Multiple voice options
- Nice built-in handle/stand

CONS
- Difficulties connecting the amplifier
- Small parts for charging
- Amplifier doesn't last as long as the talker
- Have to charge device and amplifier separately
Why AAC Works

- Visual
- Interest in technology
- Language complexity can be controlled or personalized
- Motor planning easier than speech
  → Lessens cognitive load

OBJ 2:
Identify 12 steps in the AAC evaluation process

AAC Funding: Schools

1. Talk to the IEP team and family
2. Do a pre-evaluation
3. Set an evaluation time
4. Decide on device/vendors
5. Program
6. Complete assessment

(More steps on next slide)
AAC Funding: Schools (continued)

7. Write a letter of justification
8. Gather vendor documents
9. Complete a packet
10. Re-evaluate devices/vendors if necessary
11. Send evaluation packet to the designated head of special education

AAC Funding: Insurance/Medicaid

1. Talk to the team and family: gather history, info about likes, dislikes, behaviors, etc.
2. Do a pre-evaluation – icon size, discrimination, scanning, etc.
3. Set an AAC evaluation time
4. Decide on devices/vendors

(More steps on next slide)

AAC Funding: Insurance/Medicaid (continued)

5. Program
6. Complete assessment
7. Re-evaluate devices/vendors if necessary
8. Write letter of justification
9. Gather vendor documents

(More steps on next slide)
10. Send evaluation to MD and to parents (include recommended device, accessories, and programs)
11. Have the caregiver make an appointment with the MD to get an Rx
12. Complete packet and send to insurance

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**Medicare Coverage**

- Medicare will cover 80% of the allowable cost of the device
- Remaining 20% covered by secondary insurance or out of pocket
- Medicare classifies AAC devices as “durable medical equipment”
- Assessment must stress *medical necessity* to be covered under this classification.
- Once the appropriate paperwork is submitted to the vendor, it may take up to 2 months to receive the device

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**Great Tools and References**

REPORT COACH:  
http://www.aacfundinghelp.com

AAC APPS ASSISTANT:  
http://www.aactechconnect.com/

FUNDING SUBMISSION ASSISTANT:  
https://eval.preisroom.com/access/login
Key factors in Device Selection

Visual Comprehension

*Scene vs. Grid display*

(Shane, 2014)
Know Your User

- Poor fine motor skills? Enjoys water play?
  - Needs AAC option to be waterproof
  - Will need to test for selection ability
- Fantastic at taking things apart and putting them back together?
  - Needs seems that aren’t visible or
  - Needs a cover that closes w/ screws

- Not yet self-motivated to communicate
  - Needs an arm-band or shoulder strap
- Aggressive or likely to drop it?
  - Needs a heavy-duty case
  - Needs a warranty on the device
- Loves the community? Lives in a group home?
  - Needs an amplifier

Visual Language

- Why we need it
- What is it?
- How do we use it?
Why we need it: Language Acquisition

Typical Children  Children with Autism

Why we need it: Autism & Comprehension Deficits

- Decreased attention to spoken language
- Not appreciating language as meaningful or symbolic
- Insufficient time to process auditory input
- Impaired auditory memory
- Language processing disorders

Why we need it: The Visual Field

Visuals:
- Allow additional time needed to process information
- Remove the memory requirement of spoken language

(Hodgdon, 2001)
Why we need it: The Visual Field

Visuals:
- Capitalize on the strengths of individuals with autism
- Concrete thinking
- Rote memorization
- Visual/spatial skills (Quill, 1995)
- Compensate for weakness areas of oral language
- Abstract thinking
- Communication
- Attention (Quill, 1995)

Why we need it: The Research


What is the Visual Immersion System?

Howard Shane, Boston Children’s Hospital, Monarch School has developed visual language programming that includes the following components:
- Visual Instruction Mode (VIM)
- Visual Organization Mode (VOM)
- Visual Expression Mode (VEM)
What is it?: Examples

- Static Scene Cues
- Dynamic Scene Cues
- Element Cues
- Symbolic Visual Supports

What is it?: Static vs. Dynamic

PACE Assessment
Preposition Action Concept Evaluation

- Generated commonly occurring verb and preposition directives
- Created video models and static images associated with directives and objects
- "Tested" to see how students performed
Method: Prior to Assessment

- Understand student’s level of visual representation
- Determine if concepts in the PACE have been previously acquired
- Assess the student’s ability to follow simple directions and to indicate choices
- Evaluate student’s understanding of nouns/verbs presented in assessment

Findings
How do we use it???

The seven communicative functions include:
- Protesting and Refusal
- Organization and Transitions
- Requests
- Directives
- Comments
- Questions
- Social pragmatics

OBJ 3:
Replicate three real ways to embed visual language during the school day
How do we use it every day?

A directive with visual language

Without visual

With visual

Visual Element Cues

How do we use it every day?

Conversations using AAC and visual language

How do we use it every day?

An AAC group activity with visual language
SUMMARY

1. Be able to compare/contrast at least 6 current communication apps and devices
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SUMMARY

6 current communication apps and devices
1. Sono Flex
2. Touch Chat
3. AutisMate
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5. DynaVox
6. Prentke Romich
7. NOVA Chat

SUMMARY

- Be able to identify the 12 steps in the AAC Evaluation process
- Replicate three real ways to embed visual language during the school day
  1. Group Activity
  2. Directives
  3. Conversation