AAC Device Continuum

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CREATE
The Center for Research & Expansion of Assistive Technology Excellence

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Objective

To identify the characteristics of AAC devices that comprise the current continuum of available solutions.

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AT and AAC

- **Assistive Technology (AT)**
- **Any item or piece of equipment, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.**

(Code of Federal Regulations [CFR], 34 CFR § 300.5)

- **To facilitate: mobility, play, environmental control, access, communication, participation, etc…**

» Romski, et al. (2000)

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AT and AAC

- **Augmentative & Alternative Communication (AAC)**
- **ASHA describes AAC as an area of clinical practice that attempts to compensate (either temporarily or permanently) for the impairment and disability patterns of individuals with severe expressive communication disorders including speech-language and writing.**
- **Should include individual's full communication abilities: existing speech & vocalizations, gestures, manual signs, communication boards, and speech output devices, etc…**

» Romski, et al. (2000)

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Federal Legislation

- **Technology Related Assistance for Individuals with Disabilities Act of 1988 (Tech Act, P.L. 100-407)**
- **Assistive Technology Act of 1998 (P.L.105-394)**
- **Individuals with Disabilities Education Act, 1990 (P.L. 101-476) and 1997 (P.L. 105-17) and 2004 (P.L. 108-446)**
- **Rehabilitation Act of 1973 (P.L. 93-112) Section 504**
- **Americans with Disabilities Act, 1990 (P.L. 101-336)**
- **No Child Left Behind Act of 2001 (P.L. 107-110)**

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Four Components of AAC

- **Symbols**
- **Aids**
- **Techniques**
- **Strategies**

» ASHA, (1991)

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Three W's of Communication

- Who should speak?
- When should they speak?
- Where should they speak?

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Motivation

Bakers Basic Ergonomic Equation:

Motivation = Success

P+L+C+T

Where:

P= Physical Load
L= Linguistic Load
C= Cognitive load
T= Time Load

» King, T. W., (1999).

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Continuum of Communication Tools

Dedicated

- **Speech Device**
- **Exclusive purpose**

Integrated (Non-Dedicated)

- **Speech Device on PC Platform**
- **Can provide other functions**
- **Computer, cell phone, Internet**

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Continuum of Communication Tools

Low Tech

Mid Tech

- **Single Message**
- **Sequenced Messages**

High Tech

- **Dynamic Display**
- **Icon Sequencing**

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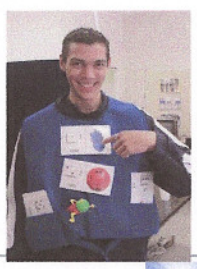
Low Tech Tools

Creativity vs. Power Consumption

- Picture Exchange
- Communication Boards
- Adapted Books
- Social Stories
- PowerPoint *e*Books
- Picture Word Processing



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Eye Gaze Talkers

E-tran frame

- See-through frame with letters or pictures
- Client uses eye movement to answer questions
- Comm. partner interprets for client

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Single Message Devices

BigMack

- Digitized recording
- Easy to change message
- Snap Caps: Symbol or picture as label

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Sequenced Single Messages

Step By Step

- Digital recording of a series of messages
- Easy to create messages
- Facilitate interactive exchanges:
  - Knock Knock Jokes
  - Lines in a Play

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Series of Single Messages

Lingo /Pocket GoTalk

- Wearable
- Levels/Volume control
- Simple to operate
- Digitized messages
- Strip of four symbols

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Static Display Devices

TechTalk, GoTalk

- Durable
  - relatively inexpensive
- Multiple levels
  - Change level
  - Change overlay
- Digitized messages
  - Easy to record, change

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Type & Talk

DYNAwrite, Link Plus, LightWriter

- Large, bright display
- Word prediction
- Stored abbreviations
- Documents created on the DynaWrite can be backed up to a Windows® or Macintosh® computer
- Onboard Universal Remote Control

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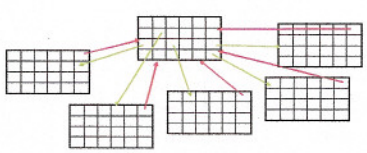
Dynamic Display

Typical pages start out looking like this...



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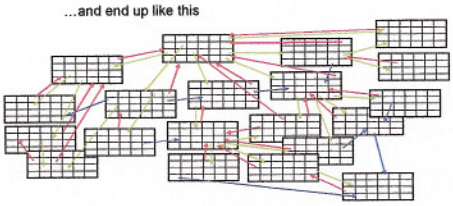
Dynamic Display

...and end up like this



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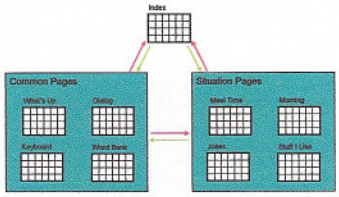
Dynamic Display

Organization is Essential



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Dynamic Display Devices

PalmTop / Silk / ChatPC 4

- Portable, lightweight
- Sturdy PDA platform
- Digitized & synthesized speech
- Attractive to consumers
- Clients with Autism
- Adults with Speech loss but no other impairment

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Dynamic Display Devices

Alt Chat

- Sturdy platform
- Saltillo Corp.
- Digitized & synthesized speech
- Adult onset, community (ALS, MS, stroke, TBI, etc.)
- Can adapt to changing physical needs

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Dynamic Display Devices

Dynavox Series V

- Integrated Speech / PC
- AACT Language Syster
- New quick programmin features:
  - User Setup Wizard,
  - Quick Page,
  - Modify button
- Visual Screen Displays

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Dynamic Display Devices

Tech Touch

Mercury & Mini-Merc

- Integrated Speech / PC
- SD Pro & BoardMaker
- Supports academic objectives

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Core Vocabulary: Icon Sequencing

MinSpeak: Operating System

- Allows Large Lexicon
- Small Symbol Set
- Speed

Unity: Language System

- Contains CORE vocabulary
- Framework for adding customized FRINGE vocabulary

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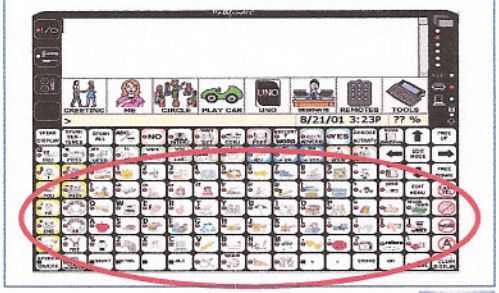
Core and Fringe Vocabulary

Humpty Dumpty sat on a wall
Humpty Dumpty had a great fall
all the King's horses
and all the King's men
couldn't put Humpty
together again.

Core Vocabulary



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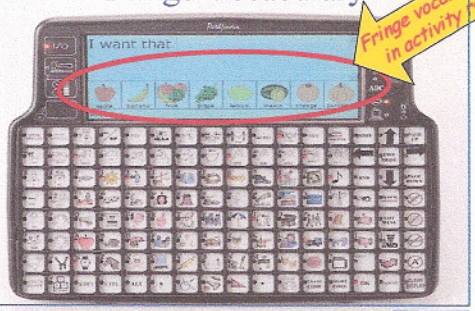
Fringe Vocabulary



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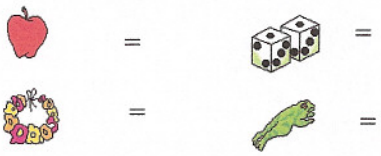
Icon Sequencing

What words do you associate with:



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Icon Sequencing

Icons in combination

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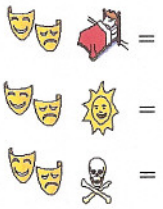
Icon Sequencing

Icons in combination



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Icon Sequencing

SpringBoard Lite

- Great starting point for someone with limited language needs
- Start simply - and build vocabulary to over 500 words
- Vocabulary already programmed for Unity 8, 15, and 32 overlays

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Icon Sequencing

Vantage Lite

- Small and portable - 3 lbs.
- Large, Bright Screen
- Higher resolution, wider view
- Icon Prediction
- Choose from ten different voices
- Record using natural voice
- Built-in infrared control
- Durable

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Icon Sequencing

Vanguard

- Synthesized and digitized speech,
- Computer emulation
- Infrared environmental controls
- Unity enhanced language system
- integrated headpointing option

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Icon Sequencing

ECO 2

- Integrated Speech / PC
- Full MinSpeak capabilities
- notebook/journal function
- integrated headpointing option
- computer emulation mode

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What's New?

Tango www.dynavoxtech.com/products/tango

- **intuitive interface,** new approach to communication, called Language Streams
- **built-in camera, USB, Compact Flash, and SD**
- voice morphing technology & state-of-the art sound design that allows voices to be heard even in noisy environments.
- Provides phrases, word-by-word sentence generation and spelling

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What's New?

Dynavox Xpress

www.dynavoxtech.com/products/xpress

- Portable - fits in a pocket or purse.
- Powerful -delivers full communication capabilities previously available only in larger devices.
- You can share meaningful messages,
- Connect with friends and family
- Browse your favorite web sites with the optional browser using a single handheld device.

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What's New?

Eye-gaze:

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What's New?

Proloquo2Go

www.proloquo2go.com

- full-featured communication solution
- natural sounding text-to-speech voices,
- up-to-date symbols,
- powerful automatic conjugations,
- default vocabulary of over 7000 items
- ease of use to the iPhone and iPod touch.

Communication on the Go for iPhone and iPod touch

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Evidence Based Practice

EBP: not a cookbook, but a roadmap

- Formulate clinical question
- Search for relevant evidence
- Critically appraise evidence for validity & importance
- Apply evidence to individual clients/ students through careful consideration of their unique values & circumstances
- Evaluating the process

Strous, Sharon. (2006), Evidence-based Health Care: Challenges and Limitations, *Augmentative and Alternative Communication*, 16(3), pg 4-6.
Yorkston, Kathryn. (2006), Evidence-based Practice: A Roadmap to Intervention, *Augmentative and Alternative Communication*, 16(3), pg 6-8.

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Issues and Questions

- Funding for Technology
- Evaluation and recommendation process
- Personas and Consumer involvement
- What role should social media play in AAC?
- Device abandonment
- Manufacturing process: zero defects?
  - What if it breaks down?
- Future of Assistive Technology

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Funding: Gathering Information

- Individual information
- Family information
- Educational information
- Public services contacted
- Assistive technology recommendations
- Funding source information

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Funding: Explore your options!

- Private Insurance
- Public Sources
- Private Sources
- Low Interest Loan Programs
- Charitable Organizations
- Service Organizations
- Local Community/Friends
- Recycling Programs
- Equipment Loan Programs

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Funding: Understand Funding Sources

- Each source has its own eligibility requirements
  - Age
  - Income
  - Disability
  - Demographics, location
- Sources will fund specific services or devices
  - Specific Services
  - Devices on certain conditions
- Additional requirements

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Funding Requirements

- Augmentative Communication Eval by an Speech Language Pathologist
- Doctor's Prescription naming specific device
- Letters (2) of Medical Necessity
  - Doctor
  - Therapist
- Denial of Coverage from Insurance Co. (if applicable)
  - EOB: Explanation of Benefits

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What About Medicare?

- Medicare has changed their policies to cover up to 80% of communication devices that are *dedicated* in nature.
- Manufacturers are shipping special versions of their devices that conform to these requirements.
- Devices have same features, except the user can only use communication functions, no other aspect of the device can be accessed.
- Visit www.aac-rerc.org for the latest Medicare information.

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References

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