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Literacy - AAC - Assistive Technology

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Speaking APPropriately: AAC and apps

What we know about supporting communication & AAC:

- No prerequisites
- Non-electronic forms are also important
- Communication is multi-modal
- Attitudes, skills and knowledge of communication partners is important
- Voice output supports speech development

Important considerations for vocabulary selection and arrangement

- Core and fringe
- Pragmatic functions
- Visual considerations
- Scanning vs direct access
- These apply to both high and low tech AAC

What we know about implementing AAC

- A system needs to be for today and tomorrow. (Beukelman & Mirenda, 2013)
- Nothing is perfect before you use it
- Not limited to face to face communication (Raghavendra et. al., 2012)
- Needs vary depending on partner and situation (Blackstone and Hunt-Berg, 2003)
- MODEL MODEL MODEL – Aided Language Stimulation (Goossens', Crain & Elder, 1992)
- Make it real - participation focus, use it in real situations

Key Frameworks

- Participation Model – Beukelman and Mirenda (2013) along with other discussion of preferences for activities and interests
- Light's (1989) definition of communicative competence – operational, linguistic, social, strategic. Use the AAC Profile (Kovach, 2009)
- Social Networks assessment (Blackstone and Hunt-Berg, 2003)
- Pragmatic Profile – (Dewart and Summers, 1995).

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Key Frameworks

- The aim of any communication system is for the person to meet his/her varied communication requirements as
    - Intelligibly – easy for communication partners to understand and listen..
    - Specifically – to make the exact message clear (near enough is not always good enough)
    - Efficiently – time, ease of access
    - Independently
    - In as socially valued manner as possible – being part of the group
- To understand others and to be understood (Porter, 1997).

Success Versus Abandonment of AAC

Factors impacting long-term success

- Person who uses AAC system experiences success 91.76%
- Degree to which the system is valued by the user and partners as a means of communication 90.58%
- System serves a variety of communicative functions 89.85%
- System is used for communication, not just as a toy or therapy tool *(Real communication)* 87.20%
- Other areas:
    - Appropriate device selected
    - Support for system

Factors leading to inappropriate abandonment

- Communication partners believe they can understand message without AAC *(not solving anything)* - 77.75%
- Insufficient opportunities - 76.80%
- User prefers a simpler means of communication *(effort higher than outcome)* 70.02%
- Vocabulary does not meet individualized daily living needs 67.70%
- Other areas
    - Lack of support – training, time for programming, knowledgeable professionals
    - Time!!!!
    - motivation

Johnson, et al. (2006)

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Reflections from adults who use AAC

''When I First Got It, I Wanted to Throw It Off a Cliff''

- Discusses the importance of:
  - Autonomy
  - Real life experiences
  - Not just requesting!!!
  - Communication Partners
  - Practice, learning and opportunities
  - Role models/modelling

Rackensperger, et. al. (2005)

Opinion Papers: Mobile Devices

- AAC-RERC White Paper (2011):
  - "partnering will serve the AAC professional better than resistance"
  - "There is a real danger of succumbing to the media's interest in smaller, faster, more powerful devices, and ignoring the other features (customizability, learnability, durability, supports for training) that are critical to successful use of AAC"
- Gosnell, J., Costello, J. & Shane, H. (2011). *Using a Clinical Approach To Answer "What Communication Apps Should We Use?*.
- McNaughton, D. & Light, J. (2013). The iPad and mobile technology revolution: Benefits and challenges for individuals who require Augmentative and Alternative Communication.
- Farrall, J. (2013b) AAC Apps and ASD: Giving Voice to Good Practice

Research

- Calculator (2014)
  - Parents consider use of mobile technologies for AAC as important, accepted, successful and useful
  - Changing landscape of devices being used particularly with respect to mobile technologies
- Flores et al (2012)
  - Communication behaviours either increased when using the iPad or remained the same when using picture cards
  - Use of the iPad did not detract from students' communication

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Assistiveware survey - Taking the Pulse of Augmentative and Alternative Communication on iOS

- Showed that AAC apps for iPad led to improvements in communication but with the following challenges:
  - Professional support (availability and knowledge/skills).
  - Limited use of pragmatic functions –eg. starting and changing a conversation.

Niemeijer, Donnellan and Robledo, 2012

Bottom Line:

- We know what we are doing in AAC but not all developers look at this when creating apps
- There is a need for better implementation of AAC apps to ensure positive outcomes

High technology AAC

- Historically had
  - Research and development before being released
  - Vocabulary systems which (mostly) reflected good practice
  - Accompanied by teaching materials and support
- Due to high production costs and low production runs the cost of these devices has also been high.
- High cost led to gatekeeping model in AAC prescription - imposed by funding bodies and supported by some AAC practitioners
- Many parents have told me how frustrating they found this as their children "had to develop" to a perceived point before getting equipment.

iPad/iPhone/iPod touch

- iPad changed the face of high tech AAC dramatically
- AAC now more consumer driven
- Easily accessed technology that large numbers of people feel comfortable with
- Gatekeeping has gone
- AAC has also become more mainstream and more desirable for many
- With nearly 300 AAC Apps on the iTunes store alone there is a lot of choice as well
- Anyone can now get a high tech AAC system for under $1000

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AAC Apps

- Over 300 on the App store, fewer for Android
- Unfortunately many of them don't reflect good practice and research
- Example 1
  - We know that category based AAC organisation slows down communication and impedes the development of language and communication skills
  - We have known this since the 0s
  - Despite this, 58 of the AAC Apps on the App store (at the time of writing) are straight category based apps
- Example 2
  - We know that voice output encourages speech development
  - Some app developers don't include speech in their AAC Apps claiming that this is because speech output will impede speech development
- Example 3
  - We know that providing an AAC system at all times and modelling use of the system throughout the day in multiple situations leads to maximum language development and best outcomes
  - In the instructions for several AAC Apps users are advised to allow access to the user only a couple of times a week until they become more competent

Let's take a look at one...

AAC Apps

- Although apps are cheap, we need to ensure that we are not just wasting money with the wrong apps:
  - Time – valuable time!
  - Opportunities
  - Attitude – user and communication partners
- The good news is that some apps are well designed and reflect good practice in AAC
- The number of these is slowly building

Benefits of mobile devices

- Cool factor and general acceptance
- "There's an app for that!!" – nearly 300 apps for AAC plus others!
- Real life models of use – much more than other devices
- Always with you – for other uses
- Portable
- Battery life
- Other uses

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- Relatively cheap
- No Gatekeepers

Limitations and Disadvantages of mobile devices

- Distractions
- Speakers
- Apps don't 'link' well……yet.
- Durability
- Some limits in accessibility features
- Ongoing change
- Attractiveness to other kids (good and bad)
- No gate-keepers (good and bad)
- Less documentation and R&D behind them

Types of apps

- Comprehensive AAC apps
- Symbol based apps
- Text based apps
- Specific situation apps e.g. phone calls, games
- Pre-planned or sequenced messages e.g. social scripts
- Initiating or encouraging interaction e.g. introduction strategy, partner focused questions
- Fringe vocabulary apps e.g. movies, friends, maps
- Sharing information and chat books e.g. specific for this purpose or mainstream such as iMovie

(Comprehensive apps can usually do most of these other functions too)
Information mostly from Farrall (2013a)

Let's look at some apps

TapSpeak Sequence Plus

For many AAC users we want them to learn how to be successful communicators as they develop language. For all AAC users, there are times when they want quick, errorless communication to get their message across TapSpeak Sequence is ideal for a range of purposes, and especially for sequenced social scripts (Musselwhite & Burkhart, 2001)

- Jokes
- News
- Cheering at a sports event
- Gossip
- Messages
- Interviews
- Etc

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Go Talk Now

Storytelling is a large part of our daily communication. For young children it is estimated to be approximately 11% of their day. As we get older it is estimated that this increases to between 50 – 80%. (See aac.unl.edu for more specific information). Story telling is an important part of how we build social closeness. Roger Schank (http://www.rogerschank.com/) has done analyses of the way in which we use stories to identify people we might want to be friends with and how we swap stories with similar themes to build social closeness.

GoTalk Now is ideal for story telling (and many other things!). It can be accessed by touch or by switch interfaces. It even has auditory scanning as an option.

Switch access to the iPad is mostly through Bluetooth interfaces. Some are only compatible with apps which are programmed to be switch accessible. See http://www.janefarrall.com/html/ipad.html for a list of all the switch accessible apps we are aware of. Interfaces which offer greater switch access to the iPad (ie choosing between apps) etc have recently been released or will be released shortly.

Fat Cat Chat Apps

Fat Cat apps from Point and Read are a series of AAC apps. Some of them are "novelty" AAC Apps. The other apps each address an area that is identified in the literature as a weakness in many AAC systems or as something that many people who use AAC don't use.

Fat Cat Snappy Chat specifically addresses Small Talk. Research into Communicative Competence tells us that Small Talk is may be an area which isn't covered in many AAC systems – but by using Small Talk a person who uses AAC can become a more valued communication partner and be seen as a more competent communicator (Light and Binger, 1998).

Fat Cat Chat Repair addresses the area of communication breakdowns – and how to repair them.

While both of these are not a fabulous stand alone communication system for an individual, they can provide great inspiration on including such phrases and language in any more comprehensive system you are setting up.

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Proloquo2Go

Proloquo2Go is one of the more comprehensive AAC apps. It that lets you create multiple communication pages and link them together. It has a comprehensive symbol library of SymbolStix symbols and comes with some pre-designed page sets - or you can make your own multi-level communication system means you can be in control of the language and the way in which the language is arranged.

Proloquo2Go 2.0 and above has core vocabulary based page options. Core vocabulary is an evidence based approach to AAC which has been in use for a large number of years. Core vocabulary gives the user access to enough language that their language development isn't held back by other's expectations. It also allows those in the user's environment enough language to model communication to them throughout the day.

Avaz AAC App for Autism

Another comprehensive AAC app with a very different organisation.

Predictable

Predictable is a text-to-speech based AAC app. It allows the user to type and talk - or Facebook - or email. Predictable offers options for saving typed sentences and has word prediction support while you are typing.

Predictable also has comprehensive access options - visual and auditory scanning.

NB If you are in doubt about whether an app might be suitable – try using it yourself for a while. If you can't use it as a competent communicator - how can you model it or expect someone else to use it?

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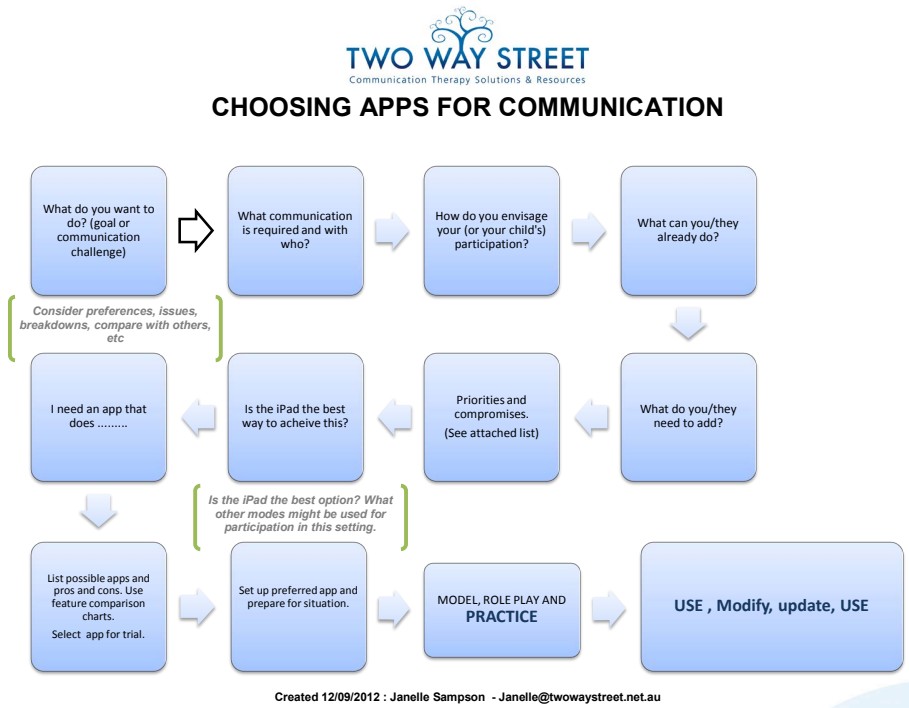
A Process for Selecting Apps



A Process for Selecting Apps – Key Points

- Need to address participation needs and pragmatic functions
  - What do you want to do?
  - Or what type of app do you need?
  - Eg. Comprehensive, activity specific, initiating communication
- Consider social networks
  - What type of communication is required and with who?
  - importance of communication partners and environmental considerations
- Consider practicalities and other realities
  - How do you envisage your (or your child's) participation?
  - Priorities and compromises
- Multi-modal
  - What can you or they already do?
- Meet communication challenges
  - What do you /they need to add?
  - Don't solve a problem that doesn't exist
  - Priorities and compromises
- Feature matching
  - Is the iPad the best way to achieve this?
  - I need an app that does…..

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    - Feature matching rubrics and matrices
    - User abilities
    - List possible apps and pros and cons
    - Select app for trial
- Vocabulary considerations
    - Setup preferred app and prepare for situation(s)
- MODEL MODEL MODEL
    - Model
    - Role play
    - Practice
- Learn in natural contexts - practice and modify
    - USE, modify, update, USE

Tools to assist in feature matching:

- Boston Children's Hospital (Jessica Gosnell's) checklist of app features http://childrenshospital.org/clinicalservices/Site2016/Documents/PDFofFeatureChart.pdf
- RELAAACs: Rubric for Evaluating the Language of apps for AAC (Carole Zangari and Robin Parker) http://praacticalaac.org/praactical/introducing-relaaacs-rubric-for-evaluating-the-language-of-apps-for-aac/
- AAC Ferrett https://itunes.apple.com/au/app/aac-ferret/id867403153?mt=8
- AAC Tech Connect http://www.aactechconnect.com/

Feature Matching

Based on Jessica Gosnell's checklist of app features http://childrenshospital.org/clinicalservices/Site2016/Documents/PDFofFeatureChart.pdf

Case Study – not included here

AAC should be:

- Used frequently, interactively and generatively to express a wide range of communicative intents;
- Occurring during at least 80% of ongoing classroom programming (as speech or manual sign use is);
- Being used to mediate communication with classmates as well as personnel (ie teachers, support officers, therapists);
- Be designed and implemented in as time and cost effective a manner as possible;

Communicative Competence

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- Light (1989)
  - Linguistic Competence (mastery of the linguistic code)
  - Operational Competence (access methods, on/off)
  - Social Competence
  - Strategic Competence (make the most of the vocab they have)
- See Kovach (2009) for an assessment based on this structure

Linguistic Competence
- Does the user know how to combine words to get their message across?
- Does the app have vocabulary that supports language input and language development?

Operational Competence
- Does the user know how to turn the iPad on and off?
- Do they know how to change the volume?
- Do they know how to open their AAC app?

Social Competence
- Does the user understand not just when it is appropriate to communicate but what it is appropriate to communicate?
- E.g. words we don't use in at school.
- E.g. small talk

Strategic Competence
- Is the user able to make the best use of the vocabulary they have in their system?

Our implementation

Aided Language
- Prospective users must be provided with frequent examples of interactive, generative use to acquire any semblance or proficiency.
- No-one would dispute the fact that it would be very difficult to become a fluent speaker or French, if you instructor seldom used French in your presence.
- Likewise, it is difficult for a nonspeaker to become a proficient AAC user if other people never model interactive use of their system during all aspects of the day.

Goossens', Crain and Elder (1988); Goossens' (2010)

Aided Language

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- It is critical for an individual to not only have symbols, but also to have experience with those symbols in a symbol rich environment / print rich environment. The typically developing child will have been exposed to oral language for approximately 4,380 waking hours by the time he begins speaking at about 18 months of age.
- If someone is using a different symbol set and only has exposure to it two times a week, for 20 – 30 minutes each, it will take the alternate symbol user 84 years to have the same experience with his symbols that the typically developing child has with the spoken word in 18 months!!!
- The typically developing child will demonstrate language competency around 9 – 12 years of age having been immersed in and practicing oral language for approximately 36,500 waking hours. For 9 – 12 years that child has been using and receiving corrective feedback while practicing with the spoken word.
- At twice a week, 20 – 30 minutes each time, it will take the alternate symbol user 701 years to have the same experience.

Jane Korsten (2011) QIAT Listserv 4th April

- **Aided Language**
- In evaluating any AAC system:
- If you (as a person proficient in language) cannot use a communication system or display throughout an interaction then how can you provided Aided Language Stimulation?
- If you cannot use it, is it designed well?

Group case study and individual case study not included here

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