Language Representation on Dynamic Display AAC Devices: How do you choose?

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Completed July 2013
Updated January 2014
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1.0 Introduction

Communication is considered to be an essential human need and therefore regarded as a basic human right. Nobody should be denied the opportunity to communicate to the best of their ability (National Joint Committee for Communication Needs of People with Severe Disabilities, 1992). As identified by Light (1989), some primary functions of communication include: expressions of wants and needs, exchange of information, social closeness and social etiquette. When the individual’s primary mode of communication (e.g. verbal or written) is not adequate to meet all functional and participatory needs, Augmentative and Alternative Communication may be used to support communication and bridge these gaps.

1.1 What is Augmentative and Alternative Communication (AAC)?

Augmentative and Alternative Communication (AAC) refers to a group of methods, strategies and/or techniques that support the use of functional and effective communication (Beukelman & Mirenda, 2005). It is an area of specialised clinical and educational practice that provides communication options and interventions for people with complex communication needs. Approximately one in five hundred people have complex communication needs in Australia (Perry, Reilly, Bloomberg & Johnson, 2002).

People with complex communication needs (i.e. speech and/or language difficulties) can use AAC to enhance existing communication methods or to replace absent speech. AAC can help people express themselves, have social interactions, participate in their community and provide opportunities to develop language (Beukelman & Mirenda, 2005). However, the main objective behind AAC is to support and enhance participation in all environments and to develop communicative competence to help an individual attain a high quality of life (Beukelman & Mirenda, 2005; Light 1997).

AAC can support communication for a wide range of individuals with varying diagnoses and complex communication needs. A review of the literature revealed an increase in speech production and communicative success with the use of AAC for children with autism spectrum disorder and pervasive developmental disorders (not otherwise specified) (Schlosser & Wendt, 2008). AAC has also been shown to successfully facilitate the language development of children with Apraxia of Speech.
(AOS), by providing them with increased opportunities to initiate and maintain communication (Cumley & Swanson, 1999). Improved quality of communication has also been observed in adults with aphasia and range of neurological conditions (Jacobs, Drew, Ogletree & Pierce, 2004; Beukelman et al., 2007).

1.2 Types of AAC

AAC systems include symbols, aids, strategies and/or techniques, used by people with complex communication needs to allow more effective communication (Speech Pathology Australia, 2004). The integrated use of these systems work to supplement an individual's use of body language, speech or writing for conveying messages. These AAC systems can be broadly categorised as “unaided” or “aided” and further categorised into high or low technology systems.

Unaided AAC incorporates communication strategies that do not require the use of communication resources external to the individual. Some examples of unaided AAC can include facial expression, body language, natural gestures and key word sign (previously Makaton) (SPA, 2004).

Aided AAC refers to resources used to assist communication. Aided AAC includes both low technology (low-tech) systems (e.g. object symbols, communication boards, scrapbooks) and high technology (high-tech) systems (e.g. speech output devices, desktop/portable computers and mobile technologies). High-tech AAC can be presented on static or dynamic displays (SPA, 2004).

On static display devices, language is organised into a grid format that corresponds with the number of icon windows of the device (such as the Go Talk 9+ pictured on the right). Most of these devices allow for recorded speech to be stored within the device and activated by pressing on the word/symbol. Often several layers of messages can be programmed for different pages, which are specific to particular communication settings/activities (Beukelman & Mirenda, 2005).
With dynamic display systems, page links are used to navigate and select symbols/words. Vocabulary items are usually organised in a ‘branch’ or ‘page tree’ structure whereby the main page provides access to various other pages. The user navigates to and from the various pages to locate words, phrases or messages. Pictures/symbols are often used to represent each word/phrase/message. Spelling pages are also available. Software is usually run on tablets and computers (Beukelman & Mirenda, 2005).

1.3 Why develop this resource?

At the current time in Australia, the release of new portable technologies has stimulated professional and community interest in AAC (McBride, 2011). Due to the increased ease of access and availability for devices such as the Apple iPad, there is an increased range of possible options to meet augmentative communicative needs (McBride, 2011). However, this wide range makes determining the most suitable and appropriate option for an individual a relatively complex process (Hill, 2010). In line with Speech Pathology Australia’s (2004) recommendations and integration of evidence-based practice, it would be ideal that a systematic and principle-based approach be taken to select and match individual needs and wants with the ideal AAC system.

An evidence-based, assistive technology specific, theoretical model developed to complement the holistic approach of the World Health Organisation International Classification of Functioning, Disability and Health (WHO-ICF), is the Matching Person and Technology (MPT) model (Scherer, 1994; Hill, 2010). The MPT addresses the environmental, personal and technological factors that should to be considered when assessing a person’s need for AAC (Scherer & Craddock, 2002). This model prioritises the primary, secondary, and tertiary components that should be considered during the process of selecting a complete AAC system. These components are detailed in the figure below:
The Matching Person and Technology (MPT) model outlines that language-based characteristics are identified as primary considerations in the decision-making process when selecting an appropriate AAC system for a person with complex communication needs (as indicated in yellow shaded box in the above diagram).

To add further to the theoretical perspective of the MPT, McBride (2011) states that it is important to consider other language-based features of an AAC system such as the organisation of vocabulary and linguistic complexity (i.e. levels of grammatical content). It is said that whether a communication app for mainstream technology or communication software for traditional AAC devices is appropriate for an individual
should be determined by incorporating a strong understanding of these MPT components, language features and the communication needs and abilities of the potential user (McBride, 2011).

1.4 Resource Rationale

Aim: The purpose of this resource is to provide comparisons of several high-tech, dynamic display AAC language systems available in Australia, in reference to important considerations such as:

- The primary components of the MPT model (language representation methods, vocabulary and message generation)
- Additional language-based characteristics such as vocabulary organisation methods and suitability across levels of linguistic ability.

It is through these comparisons that this resource will assist in the decision-making process for professionals, communicative partners and people with complex communication needs in the community who are comparing the AAC language systems available. It is important to note that this resource compares each of the systems in their default factory setting, and therefore does not consider personal modifications that may be possible.

Development: The resource was developed by two student speech pathologists over 10 weeks, based on a community project brief provided by Speech Pathologists at The Independent Living Centre of WA (ILC). The resource has been produced as a result of literature research, collaboration between the students and ILC tech team members, and collation of resources from Australian AAC suppliers. It does not include all AAC systems available but hopes to give information that could be used to evaluate other language systems.

Structure: The resource consists of three general sections:

- Elaboration of MPT primary components and additional considerations
- Comparison tables for the selected AAC language systems
- System-specific outlines with links to support and information services for the selected AAC language systems.
2.0 Considering primary components of the Matching Person and Technology (MPT) model within high-tech, dynamic display AAC language systems

2.1 Component One: Language Representation Methods

In reference to high-tech AAC, language systems utilise one or more of the following three language representation methods (LRMs): (i) single meaning pictures, (ii) alphabet-based methods and (iii) semantic compaction (Hill, 2010). The three AAC LRMs may operate in isolation or simultaneously depending on the language systems and the appearance of the visual overlay or display (Hill, 2010). Each of the three LRMs can be defined, characterised and identified within the high-tech, dynamic display AAC language systems is discussed and compared within the following sections and Table 1.

2.1.1 Single-Meaning Pictures

As the name suggests, one picture is used to represent one word or a phrase in a client’s AAC system. Vocabulary can be represented via personal photographs, pictures and/or published symbol sets such as Picture Communication Symbols (PCS Mayer-Johnson), Minspeak Icons (Semantic Compaction Systems) & Symbolstix (N2Y Inc.).

Due to the nature of single meaning pictures, this LRM may be employed for people with complex communication needs that do not have full command of spelling or literacy skills (ASHA, 2013). However a major consideration of single meaning pictures is volume; as symbol-based vocabularies potentially will need to be vast to meet communication needs (Harris, Ryder, & Totten, 2010). For example, a normally
developing three-year-old would require a symbol set of approximately 1000-1100 pictures (ASHA, 2013; Harris, Ryder, & Totten, 2010). To apply this knowledge to a high-tech, dynamic display AAC, a system that can display 50 symbols at a given time, would require at least 22 pages to represent this vocabulary (ASHA, 2013). Further characteristics of this LRM can be seen outlined in Table 1 on pages 10-11 of this resource.

2.1.2 Alphabet Based Methods

There are four methods for alphabetic language representation in high-tech AAC language systems: (i) spelling (letter-by-letter typing for each word), (ii) word prediction (user starts to spell a word and the system provides a list of possible options based on input), (iii) whole words (pre-programmed or stored from previous entries) and (iv) abbreviation-expansion (two to three letter abbreviations can access whole word/phrases (ASHA, 2013)

Alphabet based methods can be useful for literate AAC users as they are not dependent only on limited, anticipated and/or pre-programmed responses within the AAC device (Drager, Finke & Serpentine, 2010). Therefore, it can be a highly flexible method that allows equal access to core and fringe vocabularies (as discussed on page 12). Further characteristics of this LRM can be seen outlined in Table 1 on page 10-11 of this resource.
2.1.3 Semantic Compaction

'Minspeak' is the semantic compaction system commonly used in Australia (Harris, Ryder, & Totten, 2010). Within a semantic compaction system, pictures take on multiple meanings, which when linked together in short sequences, create words, phrases and sentences (ASHA, 2013).

Using a small set of pictures with a large number of possible combinations, both core and fringe vocabulary are organised in structured systems (Harris, Ryder, & Totten, 2010). These structured organisation methods are characterised by a single static overlay for core vocabulary (which allows for motor learning patterns to develop with practised use) with branching activation of fringe vocabulary (Beukelman & Mirenda, 2005). Further characteristics of this LRM can be seen outlined in Table 1 on pages 10-11 of this resource.

What to know more about Language Representation Methods in AAC?

AAC Institute:
http://www.aacinstitute.org/Resources/ProductsandServices/ConsideringAACLRMs/071004Consid eringAACLRMs.pdf

ASHA:
http://www.asha.org/public/speech/disorders/CommunicationDecisions/

Rocky Bay:
Table 1: Language Representation Methods: How do high-tech, dynamic display AAC language systems compare?

** = main method used by the system; * = additional methods available

<table>
<thead>
<tr>
<th>AAC Language System</th>
<th>Single meaning pictures</th>
<th>Semantic compaction</th>
<th>Alphabet Based</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One picture/symbol</td>
<td>Pictures take on</td>
<td>Words are</td>
</tr>
<tr>
<td></td>
<td>represents one word</td>
<td>multiple meanings,</td>
<td>spelt using</td>
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<tr>
<td></td>
<td>or phrase</td>
<td>which when sequenced</td>
<td>letters</td>
</tr>
<tr>
<td></td>
<td></td>
<td>together, create</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>words, phrases and</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>sentences</td>
<td></td>
</tr>
<tr>
<td>DynaVox Series 5</td>
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<td></td>
</tr>
<tr>
<td>InterAACt</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Grid 2</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symbol Talker</td>
<td>**</td>
<td></td>
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<tr>
<td>PODD 15/15+</td>
<td>**</td>
<td></td>
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<tr>
<td>PRC Unity</td>
<td>**</td>
<td></td>
<td></td>
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<tr>
<td>1-hit</td>
<td>**</td>
<td></td>
<td></td>
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<tr>
<td>Sequenced</td>
<td>*</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Software</td>
<td>Core Word Vocabulary</td>
<td>Basic Communication Vocabulary</td>
<td>Proloquo2Go 3.0</td>
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<tr>
<td>Proloquo2Go 3.0</td>
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<tr>
<td>Tobii Communicator</td>
<td></td>
<td></td>
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<tr>
<td>SonoFlex</td>
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<td></td>
<td>**</td>
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<tr>
<td>Sonolexis</td>
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<tr>
<td>LiterAACy</td>
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<tr>
<td>Available on NOVA chat &amp;</td>
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<tr>
<td>TouchChat HD</td>
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<tr>
<td>Multichat</td>
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<tr>
<td>VocabPC</td>
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<tr>
<td>ChatPower/WordPower</td>
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</tr>
</tbody>
</table>

(AAC Institute, 2007; Quist & Lloyd, 1997)
2.2 Component Two: Vocabulary

2.2.1 Core Vocabulary

Core vocabulary consists of only approximately 200 words, but makes up approximately 80% of the words we use to communicate (Cannon & Edmond, 2009). Core vocabularies typically consist of functional words and phrases that are used for basic wants/needs, brief social exchanges and other information necessary across multiple environments (Glennon & DeCoste, 1997). The main aim of core vocabulary is to provide the AAC user with the ability to communicate successfully about a large range of topics with a condensed set of symbols (Drager, Finke & Serpentine, 2010).


2.2.2 Fringe Vocabulary

Fringe vocabulary consists of words/phrases that are unique, in that they meet the specific communication needs and interests of a particular AAC user (Harris, Ryder, & Totten, 2010). Therefore, fringe vocabularies are rich in content and contain topic-related words that are useful to an AAC user’s daily activities and environments. Many AAC language systems contain some pre-programmed fringe words/phrases. However, for fringe vocabularies to be highly useful and meaningful they should be selected in collaboration with the AAC user and/or “informants” (i.e. parents, spouse, adult son/daughter, carer/s, teachers,
speech pathologists) who are familiar with his/her interests and common communication contexts (Beukelman and Mirenda, 2005).

Examples of fringe vocabulary may include the names of specific people, locations, and activities, as well as preferred expressions (Glennen & DeCoste, 1997).

2.3 Component Three: Method of Utterance Generation

2.3.1 Spontaneous Novel Utterance Generation (SNUG)
Spontaneous, novel utterance generation (SNUG) allows individuals to access individual words and commonly used phrases. SNUG enables individuals to spontaneously say exactly what they want to say. The ability to independently select self-created utterances closely mimics how children develop language and how adults use language in everyday situations (Hill, 2010).

2.3.2 Pre-stored sentences
Pre-stored sentences allow short phrases/messages to be stored and accessed through a single hit. Pre-stored messages can be accessed quickly and loaded with pertinent information about a specific topic (e.g. Pre-storing an entire script for calling the doctor). Comments, interjections, remarks, and conversational fillers can also be pre-stored to provide for turn-taking and topic maintenance during conversations (Hill, 2010).

How these vocabulary types are used within the high-tech, dynamic display AAC language systems is compared in Table 2.
**Table 2: Vocabulary and Message Generation: How do high-tech, dynamic display AAC language systems compare?**

* = main method used by the system; ** = additional methods available

<table>
<thead>
<tr>
<th>AAC Language System</th>
<th>Vocabulary</th>
<th>Method of Utterance generation</th>
<th>Symbol Set</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
<td>Fringe</td>
<td>SNUG</td>
</tr>
<tr>
<td>DynaVox Series 5</td>
<td>Gateway</td>
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<tr>
<td>InterAACt</td>
<td>(In Gateway)</td>
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<td>**</td>
</tr>
<tr>
<td>The Grid 2</td>
<td>Symbol Talker</td>
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<td>**</td>
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<td></td>
<td>PODD 15/15+</td>
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<td>*</td>
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<tr>
<td>PRC Unity</td>
<td>1-hit</td>
<td>**</td>
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<td></td>
<td>Sequenced</td>
<td>**</td>
<td>*</td>
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<tr>
<td>Proloquo2Go 3.0</td>
<td>Core Word Vocabulary</td>
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<td></td>
<td>Basic Communication Vocabulary</td>
<td>**</td>
<td>**</td>
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<tr>
<td>Tobii Communicator</td>
<td>SonoFlex</td>
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<td></td>
<td>Sonolexis</td>
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<td></td>
<td>LiterAACy</td>
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<tr>
<td>NOVA chat &amp;</td>
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<tr>
<td>TouchChat HD</td>
<td></td>
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<tr>
<td>Multichat</td>
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<td>**</td>
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<tr>
<td>VocabPC</td>
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<tr>
<td>ChatPower/</td>
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<tr>
<td>WordPower</td>
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</table>

Available on DynaVox Series 5 (paid add on), The Grid 2, NOVA chat, TouchChat HD

* NOVA chat & TouchChat HD
  Multichat (NOVA chat)
  VocabPC (NOVA chat)
  ChatPower/WordPower (NOVA chat & The Grid 2)
3.0 Additional language-based considerations within high-tech, dynamic display AAC language systems

3.1 Organisation of Vocabulary

For an AAC user to gain communicative benefit from a language system, vocabulary items need to be organised in a way that is effective and efficient to find and use (Drager, Finke & Serpentine, 2010). Organisation is particularly important as the user’s vocabulary grows to include an increasing amount of words and phrases that need to be stored (Beukelman & Mirenda, 2005). There are multiple vocabulary organisation methods for high-tech, dynamic display systems that operate, such as: semantic, grammatical, activity/environment based, alphabetic, frequency/importance of use, and visual scene displays. The characteristics of each of the organisational methods are briefly defined in Table 3, with reference to the high-tech, dynamic display AAC language systems selection for comparison in this resource.
Table 3: Vocabulary Organisation: How do high-tech, dynamic display AAC language systems compare?

** = main method used by the system; * = additional methods present in the system
† Vocabulary within ‘Fitzgerald Key’ is organised from left-to-right into colour-coded categories (e.g. pronouns or modifiers), with frequently used items arranged at the top/bottom of the screen display (Drager, Finke & Serpentine, 2010)

<table>
<thead>
<tr>
<th>AAC Language System</th>
<th>Semantic (Taxonomic)</th>
<th>Grammatical</th>
<th>Activity/Environment (Schematic)</th>
<th>Alphabetic</th>
<th>Frequency/Importance of Use</th>
<th>Visual Scene Display</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DynaVox Series 5</strong></td>
<td><strong>Gateway Series 5</strong></td>
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<td></td>
<td>InterAACt</td>
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<td><strong>The Grid 2</strong></td>
<td><strong>Symbol Talker</strong></td>
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<td></td>
<td>PODD 15/15+ (** Pragmatic)</td>
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<tr>
<td><strong>PRC Unity</strong></td>
<td>1-hit</td>
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<tr>
<td></td>
<td>Sequenced</td>
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<tr>
<td><strong>Proloquo2Go 3.0</strong></td>
<td><strong>Core Word Vocabulary</strong></td>
<td>*</td>
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<tr>
<td></td>
<td>Basic Communication Vocabulary</td>
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<tr>
<td>Mobility Device</td>
<td>Semantic (Taxonomic)</td>
<td>Grammatical</td>
<td>Activity/Environment (Schematic)</td>
<td>Alphabetic</td>
<td>Frequency/Importance of Use</td>
<td>Visual Scene Display</td>
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<td>Tobii Communicator</td>
<td>Sonoflex</td>
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<td>Available but not pre-programmed</td>
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<td>Sonolexis</td>
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<td>Available but not pre-programmed</td>
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<td>LiterAACy</td>
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<td>NOVA chat &amp; TouchChat HD</td>
<td>Multichat</td>
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<td></td>
<td>VocabPC</td>
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</table>

(Beukelman & Mirenda, 2005; Drager, Finke & Serpentine, 2010)
3.2 Suitability across levels of linguistic ability

According to McBride (2011), selection of appropriate AAC systems for people with complex communication needs involves several important factors including a thorough understanding of an individual’s language/linguistic abilities. It is important for clinicians working with individuals with complex communication to consider that AAC systems comprise of a number of linguistic features, including context or reasons for communication (pragmatics), the communication “dance” (discourse), word meanings (semantics), word building methods (morphology) and sentence building methods (syntax) (van Tatenhove, 2005). Typical language development has been cited as the foundation for building the inclusion of particular language content, functions, structures and modifiers available to meet the communicative needs of AAC users of particular age populations and communicative competencies (van Tatenhove, 2005). McBride (2011) and van Tatenhove (2005) suggest that for an AAC user to receive long-term benefits, have potential for increasing communicative complexity and independence, both the AAC user and people in their life (e.g. family, teacher, support workers, speech pathologists) must consider their goals and opinions in selecting a system.

As displayed in the following comparison chart (Table 4), several high-tech, dynamic display AAC language systems have been compared across a continuum of linguistic development, across three linguistic features accommodated by each of the systems. The linguistic features of systems which were compared focused primarily on the word-building (morphology) and sentence-building (syntax) abilities of the AAC system. Linguistic features accommodated by a system such as the context or reasons for communication (pragmatics) are noted to be equally important considerations, however have been omitted from the table due to interaction of individual factors that do not allow for general comparisons. This table does not include comparisons of ease of use and how efficiently messages can be generated.
Table 4: Suitability across levels of linguistic ability: How do high-tech, dynamic display AAC language systems compare?

* Communicative unit = word/symbol/signs/gestures

Please note: It is difficult to compare different systems. This table should be considered a general guide and not used in isolation.

<table>
<thead>
<tr>
<th>Length of Message</th>
<th>Emergent</th>
<th>InterAACt</th>
<th>Gateway Series 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single communicative unit*</td>
<td>Combines 2 communicative units* to create longer messages</td>
<td>Uses 2 or more communicative units* to build phrases</td>
<td>More grammatically-correct phrases and sentences of approximately 4 communicative units*</td>
</tr>
<tr>
<td>Brown’s Stage I</td>
<td>Brown’s Stage II</td>
<td>Brown’s Stage III</td>
<td>Brown’s Stage IV</td>
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<tr>
<td>Brown’s Stage V</td>
<td>Brown’s Stage V</td>
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<table>
<thead>
<tr>
<th>Grammar Stages</th>
<th>Grammar Forms</th>
</tr>
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<tbody>
<tr>
<td>Brown’s Stage I</td>
<td>Basic: “sleeping”, “my cars”, “cup on table” “in here”</td>
</tr>
<tr>
<td>Brown’s Stage II</td>
<td>Developing: “I ran away”, “in mum’s book”, “are you going?”</td>
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<tr>
<td>Brown’s Stage III</td>
<td>Consolidating: “the”, “a”, “gives”, “plays” “jumped”, “I will sleep later”</td>
</tr>
<tr>
<td>Brown’s Stage IV</td>
<td>Advanced: “if”, “because”, “Does that clock work?”, “Is she going now?”, “She’s finally ready”, “They’re driving there”, “myself”, “anybody”</td>
</tr>
<tr>
<td>Brown’s Stage V</td>
<td>Uses all basic and most advanced grammar</td>
</tr>
<tr>
<td>Proloquo2Go (Basic Com.)</td>
<td>Proloquo2Go (Core Word)</td>
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<tr>
<td>Length of Message</td>
<td>Single communicative unit*</td>
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<tr>
<td>Grammar Forms</td>
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<tr>
<td>Grammar Stages</td>
<td>Brown’s Stage I</td>
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<tr>
<td>SonoFlex</td>
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<td>Sonolexis</td>
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<tr>
<td>LiterAACy</td>
<td></td>
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</tbody>
</table>
Please note: It is difficult to compare different systems. This table should be considered a general guide and not used in isolation.
4.0 High-Tech, Dynamic Display AAC Language Systems: What is the evidence and how to find more information and support

4.1 Gateway to Language and Learning Series 5 (Gateway)

Gateway to Language and Learning (Gateway) is a group of developmental core-word, page sets designed for use by children and adult with complex communication needs (Bruno, 2006). Gateway was originally designed and developed in 1997 by Dr. Joan Bruno, an American speech pathologist with 30 years’ experience in the area of AAC, which has been adapted over time to reflect advances in technology to form the latest Series 5 edition (Ace Centre, 2013a). Gateway is embedded in the InterAACt software, which is used across many of DynaVox Technologies line of products (Dynavox, 2013a; Webster & Clarke, 2012a).

Principles Behind Development

Gateway is based on four underlying principles:

- Efficient Communication
- Effective Communication
- Ease of Learning
- Developmental Model for Language Acquisition

The vocabulary within each of the Gateway page sets was created based on word frequency research (Beukelman, Jones & Rowan, 1989; Raban, 1988), environmental surveys (Bruno, 1989; Carlson, 1981) and evaluation of the vocabulary content of

Want to know more about the evidence and principles?

Refer to page 10-13 of the Gateway Series 5 Quickstart manual:

Refer to page 54 of this resource for full references of articles related to Gateway Series 5’s development.
communication boards Bruno has used with competent communicators in clinical practice (Bruno, 2006).

Outline of Design and Features
Gateway's developmental perspective is applied across the areas of vocabulary selection, grammar/morphology inclusion and vocabulary organisation (Webster & Clarke, 2012a). In order to support various levels of language development and communicative independence, page sets include several organisational features such as:

- Color-Coding/Fitzgerald Key
- ‘Semantic Power Strips’
- ‘Opposite Strategy’
- Conversation-based home page with active links to word categories
- Tab access to specific social or academic vocabularies
- Pop-up windows for pre-programmed or frequency used phrases (Bruno, 2006; Webster & Clarke, 2012a).

Vocabularies and Page Sets Available (as of July, 2013)
Gateway contains 12 page sets which are designed to suit the vocabulary and sentence-building needs of particular AAC user populations (Bruno, 2006; Webster & Clarke, 2012a). The page sets are named according to the number of cells/icons (e.g. 60) and the age demographic of the AAC user (e.g. adult), as seen summarised in the following table:
Compatible Devices (as of July, 2013)
Gateway is available exclusively in DynaVox Technologies' line of products, which includes devices such as (but not limited to):

Maestro

Vmax+

Information and Support Services

Want to know about what these services can provide?

Refer to appendix 1, ‘AAC Support in WA’ for contact details and how to access useful online resources.

DynaVox’s website contains:
- Support for Teaching:
  http://au.dynavoxtech.com/implementation-toolkit/
- Training:
  http://au.dynavoxtech.com/training/online/recorded-web-classes/
- Technical Support:
  http://au.dynavoxtech.com/support/
- Downloads Centre (page sets, software, etc):
  http://au.dynavoxtech.com/support/downloads/
4.2 DynaVox InterAACt

InterAACt is a vocabulary of communication pages and visual scenes displays designed for DynaVox Technologies' line of products, to assist communication across different environments (Ace Centre, 2013b). InterAACt was developed by a number of American speech and language pathologists to provide a range of individualised page sets based on an AAC user's age, communication abilities and communicative contexts/situations (Ace Centre, 2013b). InterAACt is divided into specified age groups, which are further broken down along a progression of communication ability; namely functional (emergent), situational (context-dependent) and independent (creative) (DynaVox, 2013b).

**Principles behind Development**

DynaVox provides a comprehensive list of the research, literature and influences for InterAACt in their ‘Interacting with InterAACt bibliography’. The main areas of evidence and influences for InterAACt include:

- General AAC principles
- Social networks for people with disabilities
- Efficacy of visual scene displays
- Relationships between AAC users and their communication partners
- Theory and efficacy of multimodal communication
- Aided vs. unaided language development of single words, phrases and sentences
- The role of ‘distributed cognition’ and ‘representational determinism’ in AAC
- Internal research using a range of language sample databases and psycholinguistic tools

(Higginbotham & Wilkins, 2008)
Outline of Design and Features
The characteristics of InterAACt are influenced by the five core elements that aim to assist continuity and transition across the page sets for different ages and communication skill levels. The five elements of InterAACt include:

- ‘Topic Pages’ and ‘Quickfires’ to increase communication rate
- Access to core-word vocabularies like Gateway Series 5 to assist development of communication complexity
- Icons/buttons are organised consistently and grammatically to enable transition between ages and skill levels.
- Customisable symbol libraries, templates and editing tools.
- Computer and environmental controls.

Vocabularies and Page Sets Available (as of July, 2013)
Individual page sets within InterAACt are available for ‘Emergent’, ‘Context-Dependent’ and ‘Independent’ skill levels (as defined in the InterAACt guide) within each of the five age groups; ‘Young Child’ (2-6 years), ‘Child’ (7-13 years), ‘Teen’ (14-21 years), ‘Young Adult’ (22-50 years) and ‘Adult’ (50+ years).

The InterAACt page sets are designed to follow a consistent structure so as an AAC user’s age, communication skills and daily conversational needs change they may transition more efficiently across the range of page sets. InterAACt provides access to core-word vocabularies through ‘Gateway Language and Learning’ (Gateway) on Series 5 devices (e.g. Maestro) and ‘Xpress Core’ on Xpress devices (DynaVox, 2013c). Integrated use of InterAACt with these core word vocabularies is...
common, however some users may wish to purchase speech pathologist developed companion products such as Nancy Inman’s ‘WordPower’ and Amy Roman’s ‘AlphaCore’ (Dynavox, 2013c).

**Compatible Devices (as of July, 2013)**
InterAACt is available exclusively in DynaVox Technologies’ line of products, which includes devices such as (but not limited to): Maestro, Vmax+ & Xpress.

\[\text{Vmax EyeMax} \quad \text{Maestro} \quad \text{Xpress}\]

**Information and Support Services**

Want to know more about InterAACt’s companion products?

Want to know about what these services can provide?
Refer to the following for contact details and how to access useful online resources:
Appendix. 1: ‘AAC Support in WA’
Further links to online resources are listed on page 25, under Gateway.
4.3 Symbol Talker for The Grid 2

Symbol Talker is a licensed page set for The Grid 2, which was designed for people with no or limited literacy skills that are beginning to use symbols to communicate (Smartbox Assistive Technology, 2013b). Symbol Talker was designed by Sensory Software as one of the preloaded, page sets for The Grid 2 software, alongside vocabularies such as Text Talker Phrasebook (Sensory Software International, 2013).

Outline of Page Sets, Design and Features
Symbol Talker is divided into two separate vocabularies, level A and level B, which are designed to assist an AAC user’s transition from basic sentence building (a) to increasingly more complex language use (a) within the same grid size and layout (Smartbox Assistive Technology, 2013). The progression in linguistic ability between level A and B of Symbol Talker can be seen highlighted in Sensory Software’s (2013) communication pathway below:
The Grid 2 communication pathway was developed as general guide for choosing page sets designed for particular AAC populations (Sensory Software International, 2013). The Grid 2’s symbol-based page sets (like Symbol Talker) focus on communication, literacy development, and education (Sensory Software International, 2013).

Some of the features of Symbol Talker include:

- Primary use of Widgit symbols, with SymbolStix as a paid add-on
- Approximate vocabulary size of 2,000 words/symbols
- Approximately 121 topic-based page sets across more than 50 topics
- Colour coding for parts of speech
- Symbol Talker B includes links to ‘sentence starters’ and ‘small words’ to assist increased independence with sentence-building
- Symbol Talker B has activity pages that support creative language use for functions such as fictional story writing and rhyming activities

**Compatible Devices (as of July, 2013)**

Currently in Australia, Symbol Talker A & B are available across two different technology platforms; The Grid 2 software and the iOS Grid Player app.

Symbol Talker A or B page sets can be accessed through The Grid 2 software on Microsoft Windows enabled devices such as (but not limited to): Bespoke, PowerBox 7, PowerBox MOTION, Tellus 4 or Windows Tablets (e.g. Windows Surface Pro) (Zyteq, 2012).
Version 1.0 of The GridPlayer iOS app is available for the Apple iPad and the Papoo Touch. At time of completion of this resource, Sensory Software was developing a version upgrade which would be compatible with the Apple iPhone and iPod Touch (Zyteq, 2012).

Information and Support Services

Want to know about what these services can provide?

Refer to appendix 1, ‘AAC Support in WA’ for contact details and how to access useful online resources.

Sensory Software website contains:
- Links to ‘Online Grids’ for downloads: https://grids.sensorysoftware.com/en
- ‘Sensory Support’ (live technical support): http://www.sensorysoftware.com/support.html
- Access their facebook page for updates on the new version of the Grid Player for iOS: http://www.facebook.com/sensorysoftware
4.4 PODD 15 for The Grid 2

PODD 15 is a licensed grid set for The Grid 2, which uses a similar layout and vocabulary organisation to the one-page-opening expanded-functions pragmatic organisation dynamic display (PODD) communication books (Smartbox Assistive Technology, 2013a). PODDs have been designed and developed by Gayle Porter, a speech pathologist at the Cerebral Palsy Education Centre (CPEC) in Victoria, over the past 15 years by drawing on her experience with children with complex communication needs and their families (Porter & Sensory Software International Ltd, 2012). PODD 15 was developed through collaboration between Gail Porter, Sensory Software International and Zyteq to adapt the paper-based methods (Porter, 2007; Porter, 2008) so they can operate on speech-output, high-tech AAC devices.

Principles Behind Development

PODD 15 employs the same underlying principles as the paper-based methods, whereby Porter’s clinical experiences with the AAC community and general aims of AAC intervention have influenced its continued development (Novita Children’s Services, 2013; Porter & Cafiero, 2009). These general aims refer to a person’s ability to meet his/her communicative needs as intelligibly, specifically, efficiently, independently and in as socially-aware a manner as possible, in order to understand others and be understood in return (Porter, 1997).

The PODD 15 user manual (Porter & Sensory Software International Ltd, 2012) provides information on the influences and decision-making process in developing the page sets. These influences included:

Want to know more about vocabulary selection and organisation in PODD 15?

Theories of pragmatic use of aided language
Typical development of spoken English
Principles of aided language development
Use of data collected from Porter’s clinical use of pragmatically (activity/environment) organised AAC language systems with people with complex communication needs

Outline of Design and Features
PODD 15 page sets are designed to support children with complex communication needs who are learning to:

- Use a wide range of communicative functions (i.e. questioning, relaying information, story-telling, narrating, instructing, requesting, answering, expressing opinions/ideas).
- Use a range of vocabularies for day-to-day experiences.

PODD 15 page sets have built-in scaffolds (including pragmatic branches/branch starters, predictable links, tense cues, information chunking & yes/no question markers) to support intelligibility for children at various stages of aided language development. (Smartbox Assistive Technology, 2012a; Webster & Clarke, 2012a).

Vocabularies and Page Sets Available (as of July, 2013)
PODD 15 contains four page sets: a PODD 15 preschool, PODD 15 School, PODD 15+ Preschool & PODD 15+ School.
The PODD 15 and 15+ page sets are adapted from the paper-based 12 and 20 expanded-functions PODD communication books, respectively, to suit high-tech dynamic display AAC language systems (Porter & Sensory Software International Ltd, 2012).
Compatible Devices (as of July, 2013)
In order to use PODD page sets, a high-tech AAC device must first have the Grid 2 installed. The Grid 2 is a software program designed to run on Microsoft Windows operating systems, therefore PODD and other The Grid 2 page sets are available on Windows enabled devices such as (but not limited to): Powerbox Motion, Tobii C-Series, Bespoke, PowerBox 7, Tellus 4 or Windows Touch Screen Tablets (e.g. Windows Surface Pro) (Porter, 2012; Zyteq, 2012).

**Note:** At time of completion of this resource, PODD 15 and 15+ is not currently available on The GridPlayer for iOS (Apple Inc.), and therefore cannot be used on the Apple iPad, iPhone, iPod touch and Papoo Touch.

Information and Support Services
4.5 PRC Unity

Unity is a Minspeak Application Program (MAP) which focuses on combining a consistent core vocabulary with flexible single-word/icon and phrase-based fringe vocabulary to increase language opportunities for individuals across a range of age groups and communication needs (AAC Institute, n.d.; Ace Centre, 2013b; The Centre for Cerebral Palsy, 2007). Unity was created in 1995 through collaboration between Barry Romich & Ed Prentke (Prentke Romich Company) and Bruce Baker (Semantic Compation Systems), to devise a clinical application of Baker’s Minspeak principles for high-tech, dynamic display AAC language systems (AAC Institute, n.d.; Minspeak, 2009).

**Principles Behind Development**
The four foundations of Unity are based on theoretical and research understandings of language representation in AAC systems for varied levels of communication need. The four foundations include:

- Natural vocabulary and grammatical development
- Single word (SNUG) and pre-stored messages for increased interaction across communicative functions and contexts
- Consistent icon locations in AAC, establishment of motor programs, automaticity for repeated access patterns in digital technologies
- Semantic associations for compacted

Want to know more about the foundations of Unity?
Visit the Prentke Romich Company (PRC) website to access the ‘A Quick Course on the Why and How of Unity’:
http://www.prentrom.com/training/courses/unity/how-why-
organisation of large vocabularies and overcoming difficulties with iconicity of single-meaning pictures through icon sequencing

(Prentke Romich Company, 2013)

For further information regarding the foundations of Unity, Bruce Baker and Semantic Compaction Systems provide access to conference papers, newsletter articles and peer-reviewed journal articles for the applications, principles and continued development of MAPs such as Unity through the Minspeak website.

Outline of Design and Features

All Unity based high-tech devices feature touchscreen, dynamic displays with access to a grid organisation of vocabulary icons dependent on type of page set (e.g. Unity 60 consistently displays a grid of 60 icons). Unity’s design aims to provide access to a wider range of vocabulary, using a small number of icons. In order to meet these aims, Unity utilises representation and organisation features such as (but not limited to):

- **Static locations** of core vocabulary promoting automaticity and learnt motor programs
- **Colour coding** - categorisation of parts of speech
- **Dynamic rows** - selection of core words accesses a scrolling menu of relevant fringe vocabulary at the top of the display
- **Icon prediction** - once an icon is selected, only concepts that can be appropriately sequenced are shown as active icons
- **Masking** - through the vocabulary builder tool to temporarily hide specific icons to assist in the development of language and motor planning for specific words

(Webster & Clarke, 2013b)
Vocabularies and Page Sets Available (as of July, 2013)
The Unity vocabulary program contains several different page sets (some of which are device specific) as seen below:

- Unity 144 (1-Hit or Sequenced)
- Unity 84 (1-Hit or Sequenced)
- Unity 60 (1-Hit or Sequenced)
- Unity 45 (1-Hit or Sequenced)
- Springboard Unity 4, 8, 15 and 32

(Ace Centre, 2013b; Cameron et al., 2011; AAC Language Lab, 2013)

Within Unity 1-hit page sets, every icon represents one word or phrase (i.e. single meaning pictures) and voice output is produced after every key stroke. It is suggested that Unity 1-hit page sets may be a useful start point for AAC users who are “still learning cause & effect and need immediate reinforcement when selecting a word” (Cameron et al, 2011, pp.8).

Alternatively the Unity Sequenced page sets require two or more icons to be selected to produce voice output (except for a few frequently used words). It is suggested that Unity Sequenced page sets provide more complex language including fringe vocabulary and grammatical forms related to needs, interests and participation in daily activities (Cameron et al., 2011). Unity Sequenced is recommended for AAC users with adequate attentional resources and emerging word or sentence building skills (Cameron et al., 2011).
Compatible Dynamic Display Devices (as of July, 2013)

Unity is available exclusively in the PRC/Liberator line of products, which includes devices such as (but not limited to): Accent 1000, Accent 1200, ECO2, ECOpoint, Springboard Lite and Vantage Lite.

Accent 1000  ECO2  Vantage Lite

Further device information can be accessed from the Liberator Australia website: http://liberator.net.au/products/high-tech-communication-aids

Information and Support Services

Want to know more about what these services can provide?

Refer to Appendix. 1, ‘AAC Support in WA’ for contact details and how to access useful information
4.5 Proloquo2Go (Version 3.0)

Proloquo2Go, originally designed and developed by Dr. David Niemeijer and Samuel Sennott for AssistiveWare®, is an AAC application for individuals with speaking difficulties. Proloquo2Go is an easy to use, affordable and portable application that runs on various Apple iDevices. Proloquo2Go enables people to communicate using symbols or typed text in a human like natural voice that matches their age and gender (AssistiveWare, 2013).

**Principles of Development**
The application’s aim is to provide users with an efficient, cost effective and customizable alternative communication system. This involved the development of features that include two research-based vocabulary organisations ‘Core Word’ and ‘Basic Communication’ (AssistiveWare, 2013). Development of the components also involved both clinicians with AAC use experience and feedback from the end users of earlier versions.

**Outline of Design and Features**
Proloquo2Go employs VocaPriority™ to organise words by the frequency of use. Frequently used words are placed at the primary priority level (navigated by 1 level of folders) and words that are less frequently are placed in the secondary priority level (navigated by 2 levels of folders). This includes options to access sentences created 60 minutes to one week before (AssistiveWare, 2013). ExpressivePower™ is a new feature in Version 3. Prerecorded expressions and sounds can be added onto buttons. These expressions have intonation and can improve how natural the voices sound (AssistiveWare, 2013). Further customization options are available.
Vocabulary and Page Sets

**Basic Communication Vocabulary**

Designed for those who are just beginning to use AAC to serve basic communication needs. It includes categories such as: greetings, requests, basic personal information, manners, and questions. Basic Communication vocabulary has simple navigation hierarchy that is 2 levels deep. The number of buttons that appear on the screen at a time can be modified (AssistiveWare, 2013).

**Core word Vocabulary**

Designed for users who are able to put two or more words together to make sentences. Core Word vocabulary provides home pages, which allow for quick access to core words and to folders containing fringe words to allow users to produce complete sentences. The number of buttons that appear on the screen at a time can be modified (AssistiveWare, 2013).

Want to learn more about selecting a suitable configuration?

**Basic Communication:**
http://download.assistiveware.com/prologuo2go/files/Prologuo2Go_Tutorial-Intro_to_Basic_Communication.pdf

**Core Word:**
http://download.assistiveware.com/prologuo2go/files/Prologuo2Go_Tutorial-Intro_to_Core_Word.pdf
Compatible Devices
The Proloquo2Go application is currently available for download at the iTunes App Store (https://itunes.apple.com/au/app/proloquo2go/id308368164?mt=8) for an iPad/iPad Mini, iPhone and iPod Touch.

Information and Support Services

FAQs and programming answers:

YouTube support videos:
http://www.youtube.com/user/proloquo2go

Want to know more about what these services can provide?
Refer to Appendix 1, ‘AAC Support in WA’ for contact details and how to access useful information.
4.6 Tobii Communicator
Tobii Communicator is software platform created by Tobii Technology. It supports the use of different vocabulary add-ons to provide symbol-to-speech and text-to-speech options to suit individuals with varying levels of communication difficulties (Tobii Technology, 2013). This resource will review the symbol-based dynamic display software, Sono Flex, Sono Lexis and LiterAACy.

4.6.1 Sono Flex
Tobii Sono Flex was designed to combine the benefits of both core vocabulary and fringe vocabulary for specific activities. The vocabulary in Sono Flex draws on extensive research on core and fringe vocabulary with a particular focus on the cognitive and linguistic demands of typically developing children 3-6 years of age (Tobii Sono Flex, 2013).

Outline of Design and Features
Designed to allow access to a vocabulary of around 1,000 words, core vocabulary is organised according to the Fitzgerald key, with an additional choice of 4 activity based folders (green tabs on the right) from a choice of 50 pre-made context folders.

Vocabularies and Page Sets
In addition to the Common Vocabulary Home Page, Sono Flex also provides a Context based Home Page, suitable for early AAC users, where only activity based context pages are accessible.

Compatible Devices
Sono Flex is available as an add-on to Tobii Communicator. It is available on the Tobii C and I series devices, Tobii Tablet Kit, Windows based devices or can be downloaded as an application on an iPhone, iPod touch and iPad/iPad Mini, Android and Kindle fire.
4.6.2  Sono Lexis

Tobii Sono Lexis was designed to help non-literate users build sentences in a visual and structurally consistent manner (Tobii Technonology, 2013). Developed at Catholic University of Applied Sciences in Freiburg, the modular design Sono Lexis draws on theories of motor memory learning and on the approach based on the Fitzgerald Key. The focus of Sono Lexis is to enable individuals to navigate through vocabulary efficiently and autonomously (Tobii Techonology, 2013).

Outline of Design and Features

Designed to allow access to a vocabulary of around 2,000 words, vocabulary is displayed in a structured and consistent manner. The core vocabulary appears in a fixed position (usually at the bottom rows). Whilst the categories are displayed in the middle rows, the top row is left for dynamic vocabulary which changes depending on the category chosen. This structural consistency reduces the need for visual orientation with each new page (Tobii Sono Lexis, 2013).

Vocabularies and Page Sets

Three different modifiable layout configurations are available: 7x5, 9x6 and 12x9. Additionally, Sono Lexis comes with 4 blank templates that can be used for creating new grid sets.

Compatible Devices

Sono Lexis is available as an add-on to Tobii Communicator. It is available on the Tobii Tablet Kit, Tobii C and I series devices and Windows based devices.
4.6.3 LiterAACy

LiterAACy was designed to approach the navigation of vocabulary by incorporating similar strategies used when learning how to read and write. It was developed by Lars Tiedemann and Nele Diercks (a 20 year old user of AAC). As LiterAACy categorises words by the first letter, users with knowledge of the initial sound of a word can navigate through the vocabulary (Tobii Technology, 2013).

Outline of Design and Features
LiterAACy is designed to allow access to a vocabulary of around 3,000 words in two key presses (Lars Tiedemann, 2013). Vocabulary is colour coded according to the Fitzgerald key and word prediction capabilities provide word options that are displayed as SymbolStix symbols. Additionally, it has masking capabilities that masks letters that are unlikely to be the next letter of a word (LiterAACy, 2013).

Vocabularies and Page Sets
Choices of 3 page sets with varying vocabulary sizes are pre-programmed and ready to be used. These pre-programmed page sets can be edited to suit particular needs and interests of the individual. These page sets are:

- 7 x 5 - contains more than 1,000 words
- 9 X 6 – contains more than 2,500 words. Option to allow second letter typing.
- 12 x 9 – contains more than 3,500 words. Word prediction capabilities available for this page set
Compatible Devices
LiterAACy is available as an add-on to Tobii Communicator. It is available on the Tobii C and I series devices, Tobii Tablet Kit and Windows based devices.

Information and Support Services

Want to know more about programming the all the Tobii software?
Visit the Tobii website for user manuals and training videos:

Want to know more about what these services can provide?
Refer to Appendix 1, ‘AAC Support in WA’ for contact details and how to access useful information
4.7 WordPower

WordPower software is a word-based communication application available for a variety of AAC devices (Inman Innovations, 2013a). Developed by Nancy Inman, a Speech and Language Pathologist, WordPower combines the features of core vocabulary, spelling and word prediction. Two versions include the text-based WordPower, and the text and picture-based Picture WordPower. Picture WordPower is a word-based vocabulary similar to that of WordPower, with additional picture support. WordPower has been developed into Chat Power for some devices.

Principles of Development
WordPower is designed based on the assumption that the 100 words that are used in its core vocabulary database accounts for approximately 50 percent spoken words. WordPower therefore uses these 100 plus words in conjunction with spelling and word predict to create single-hit, 2-hit and 3-hit words (Inman Innovations, 2013b).

Outline of Design and Features
The core words of WordPower are categorized and color-coded in the Fitzgerald Key format for easy access. WordPower incorporates instant page changes powered by logical next word and character prediction allowing efficient access to the vocabulary during communication. WordPower can be used with PCS symbols, Widgit Literacy symbols, or SymbolStix symbols.
**Vocabularies and Page Sets**

**Compatible Devices**
WordPower is compatible with any windows-based system, The Grid 2, Mind Express, Tobii Communicator 4, Dynavox Series 5 software or downloaded as an iTunes application under the TouchChatHD app for iDevices. Similar pages (ChatPower) have also been created for NOVA Chat devices by Saltillo.

*Note: Minor differences between the layout, grammar, verb morphology and spelling support are evident on different software platforms.*
Want to know more about what these services can provide?

Refer to Appendix 1, ‘AAC Support in WA’ for contact details and how to access useful information.
5.0 Acknowledgements

We would like to thank all the staff for welcoming and encouraging us during our placement at the Independent Living Centre of WA. Special thanks is extended to the ILC Tech team, namely Amy Litton, Kelly Moore, Jessica Rigden, Linda Tran, Sara Chong and Margaret Lovejoy, for the knowledge and assistance that they generously offered throughout the development of this resource. We would also like to express our appreciation for the email assistance we received from the Australian suppliers and software companies.
6.0 References – General


7.0 References – System Specific

7.1 DynaVox

Gateway Series 5


**DynaVox InterAACt**


7.2 The Grid 2

PODD 15


**Symbol Talker**


### 7.3 PRC Unity


7.4 Proloquo2Go

7.5 Tobii Communicator


7.6 **WordPower**

### 8.0 Appendices

#### Appendix 1. AAC Support in WA

Your first point of call for AAC Support is your primary Speech Pathologist and Occupational Therapist. If you don't have one, speak to your Local Area Coordinator or GP for a referral. If you are unsure about services that are available, feel free to contact ILC Tech for some advice or refer to the list below of specialist AAC Services.

<table>
<thead>
<tr>
<th>CP Tech</th>
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<tr>
<td><strong>Referrals</strong> can be made via the CP Tech website: <a href="http://www.cptech.com.au/Clinical_Services~Referrals">http://www.cptech.com.au/Clinical_Services~Referrals</a> or by contacting <a href="mailto:cptech@tccp.com.au">cptech@tccp.com.au</a>. Ph: 9443 0210 Email: <a href="mailto:cptech@tccp.com.au">cptech@tccp.com.au</a></td>
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<tr>
<td>CP Tech is a consultancy service that works with clients of The Centre for Cerebral Palsy, their families and other stakeholders, providing advice, support, and technical expertise to assist those with disabilities to gain greater independence through the use of equipment and technology options. The CP Tech Assistive Technology Team includes 2 senior speech pathologists, 2 senior occupational therapists and skilled technical staff who work in partnership with clients and those who support them to identify individual needs, explore and trial equipment options to enhance an individual’s ability to communicate, make recommendations for AAC systems and other assistive technology, and provide ongoing support in implementing the system across a range of environments. Support can also be given with alternative access options for equipment. In addition, the service offers specialist support to external agencies and their CAEP eligible clients through the Interaction for Function (IFF) Programme. People who are not CAEP eligible may also pay a fee to access the CP Tech service using the TCCP Consultancy Services program.</td>
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<th>ILC Tech</th>
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<td>ILC Tech is a free information and advisory service based in Nedlands. ILC Tech provides a state-wide service to clients, families and staff who require information, advice and training to choose or use AAC (low and high tech) and other assistive technologies. The ILC Tech team consists of Occupational Therapists and Speech Pathologists. Consultation can be done by phone, email, appointment in person or by videoconference. The purpose of ILC Tech is to assist people in being aware of the range of AAC options that are available with suitable features to meet their needs. Using the ILC Tech service enhances the team’s knowledge and confidence in selecting the most appropriate AAC options. The service can also be accessed by family/ carers or other support people who require information about how to use an AAC system (e.g. supporting with learning to program). ILC Hire has a range of speech generating devices available for hire. ILC Tech can also assist with information on available funding for communication aids.</td>
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*This information and advisory service is available to anyone.*
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<tr>
<th><strong>Disability Services Commission</strong>&lt;br&gt;<strong>Country Resource &amp; Consultancy Team</strong>&lt;br&gt;Ph: 08 9426 9292 TTY: 9426 9315&lt;br&gt;Toll Free (Country): 1800 998 214&lt;br&gt;<a href="mailto:CRCTAdmin@dsc.wa.gov.au">CRCTAdmin@dsc.wa.gov.au</a>&lt;br&gt;&lt;a href=&quot;www.dsc.wa.gov.au&quot;&gt;www.dsc.wa.gov.au&lt;/a&gt;&lt;br&gt;&lt;em&gt;This service is available to therapists working in regional WA&lt;/em&gt;</th>
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<td>The Country Resource &amp; Consultancy Team (CRCT) is a branch of the Statewide Specialist Service Directorate at Disability Services Commission (DSC) which provides disability professional services. The role of the team is to provide training, consultancy and education to therapists in country areas to support their ongoing professional competence and development in working with people with disability. The team can support therapists in; their knowledge of AAC options, determining appropriate AAC for clients, their clients’ AAC trials and evaluations, supporting the implementation of AAC and developing appropriate goals. The CRC team have a range of low tech AAC options to show during visits. When the CRCT becomes involved, the local therapists continue to be the main therapy provider for the client. The CRCT liaises with metropolitan-based service providers (e.g. Independent Living Centre, The Centre for Cerebral Palsy). This may include support at client specialist appointments in Perth, on request.</td>
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<td><strong>Disability Services Commission</strong>&lt;br&gt;<strong>Equipment Therapy Team</strong>&lt;br&gt;Ph: 08 9426 9200&lt;br&gt;Kaye Donec, Equipment Team Leader&lt;br&gt;<a href="mailto:Kaye.donec@dsc.wa.gov.au">Kaye.donec@dsc.wa.gov.au</a>&lt;br&gt;&lt;em&gt;Referral criteria includes adults with an intellectual disability (registered with DSC and eligible for DSC funded services) living in the community.&lt;/em&gt;</td>
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<td>The Equipment Therapy Team (ETT) is part of the Statewide Specialist Services directorate at Disability Services Commission (DSC). The ETT works with the individual, family and other stakeholders to provide equipment for people with disabilities. The team offers individual consultation and assessment to determine needs and find practical solutions. AAC products include communication equipment such as speech generating devices and picture based communication boards. The team coordinates funding, trialling and ordering of equipment from commercial manufacturers and suppliers. Following provision of the equipment, the team ensures the individual and family understand how the equipment is used. The team monitors the equipment to ensure it is working well on an ongoing basis. The individual or family may contact the team if there are any concerns with the equipment.</td>
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Liberator Australia employs a team of professionals to provide customers with training and support for communication, inclusion and independence. Support may include training and education in Minspeak and the Unity language system, support with device programming and troubleshooting, support during trial of Liberator/PRC devices (eg. Accent 1200, ECO2, ECOpoint eye-gaze system, Vantage Lite, NovaChat), AAC implementation strategies, goal-setting for language learning, and more. We also provide remote/online training to regional customers via Skype or Go To Meeting, and can direct clients to suitable webinars at www.prentrom.com and support resources at www.aaclanguagelab.com. Liberator offers free device trials, and technical support is readily available by phone and email. For more information or to join the Liberator mailing list, please contact the local consultant for WA, Sue Ash, or Liberator head office.

Link-AT is a supplier of Assistive Technology And Augmentative and Alternative Communication (AAC) products and offers training and support for these products. Link-AT carries the entire product range of Tobii Technology (e.g. Tobii C12, C15, PCEye), the full range of mounting products from REHAdapt (e.g. Monty 3D, Tablet Mounts), supplies and supports products like the LightWRITER SL40, PapooTouch, SpeakOut, Magic Carpet and more. Training and Support: Link-AT offers online training through Skype or Netviewer. All PC-based products (e.g. Tobii devices, Magic Carpet PC’s) are equipped with remote support software. This means that we only need to have the device online to do technical support. Resources can be accessed via our website (download section on product pages). If you can’t find what you’re looking for just send an email to office@linkassistive.com. To sign up for our newsletter send an email to office@linkassistive.com for more information on user stories, product news etc. follow us via Facebook http://facebook.com/linkassistivetechnology

Spectronics sells and actively supports speech generating devices and accessories to customers in all states of Australia – devices sourced from many companies worldwide. These range from the simple single message devices from AbleNet right up to the high-end devices like the Maestro, VMax and EyeMax eye gaze system from DynaVox. Spectronics’ technical support team offer free phone and email support for the life of the device. They are also able to repair devices onsite at the Head Office in Brisbane – saving you having to ship the device back to the overseas manufacturer for repair. The team of speech pathologists at Spectronics offer expert advice on device selection and customisation, strongly recommending trial of more expensive devices before purchase, through the Spectronics Equipment Trial Scheme at www.spectronics.com.au/trials. The new Spectronics Online Premium Subscription service offers subscribers access to a wide range of videos and resources going more deeply into strategies for supporting iPads as communication and special education support tools.
Zyteq is an Australian company: a supplier of assistive technology. We specialise in speech generating devices and have three Speech Pathologists on staff that are available for support and training, via phone, email and Skype. Zyteq provides equipment, training and services Australia wide. If you wish to phone our free call number to discuss our speech generating devices, you can speak to Speech Pathologists who will understand the needs of the intended user, and be able to work through pertinent questions with you. Through discussion we can assist with specific device details, comparisons and work out whether the device of interest has the required features. Zyteq produces an electronic newsletter approximately monthly. To sign up to our newsletter please enter your name and email address on the home page of our website. Zyteq has a schedule of presentations around the country, and sessions can be requested. Zyteq has our major speech generating systems available for short-term trial. A primary therapist is required to coordinate and supervise the trial. There is no charge or hire fee for the trial period, however the cost of returning the equipment is to be covered by the borrower. Support during the trial is available and waitlist may apply.