Consider the following scenario. A non-verbal child is given a communication device to use in a classroom craft activity. It has the phrase *I want* and a host of items that the children will be using during the activity such as *glue, paper, scissors*. This will allow the child to request items during the activity. But it will not allow the child to request items during the activity. But it will not allow the child to comment (*The silver glitter is my favourite!*), protest (*No! The big scissors*), construct longer sentences (*I want the pink shiny paper*) or take conversational turns (*Guess what I might choose next?). Therefore, **thinking about vocabulary** and how we represent it in an augmentative and alternative communication (AAC) system is crucial to providing the child with the opportunity to learn language and communicate successfully.

People who use AAC well commonly report that the two most important things to them are (AAC Institute, n.d.):
- saying exactly what they want to say, and
- saying it as fast as possible.

There are three ways to represent language in AAC and communication devices use one or more of them. The language representation method will impact on what the child can say and how fast they can say it. Let’s look at these different methods in more detail (Semantic Compaction Systems, 2009):

**Single Meaning Pictures**
One picture represents one meaning. So when you select the picture you are communicating the corresponding word.

We can use photos, pictures from the internet, or commercially available picture symbol systems (such as Picture Communication Symbols [PCS], Soft-pics, Widgit Symbols and Pixons) and this is often the language representation method used for low tech communication boards and books.

It is easy to represent nouns – people, places and things - but the challenge with this method comes in the representation of other vocabulary. Picture production is not as easy for words that are difficult to represent by pictures. Consider the words *give, help, more* represented below using PCS.
Volume becomes an issue as the child’s vocabulary grows. A typical 3 year old has a vocabulary of 1000 words – that means the AAC user would need to be able to identify 1000 pictures. And as the vocabulary grows, the amount of words with similar meaning grow. Consider how you would differentiate between mine, my, me, myself.

Organisation of vocabulary in this method is usually in groups so the person knows where to find a word to use it. These groups might be according to parts of speech (eg. question words), categories (eg. places, foods) or activities (eg. cooking, shopping). Vocabulary may also be organised based on the purpose of the message (eg. giving an opinion, requesting, or indicating that something is wrong) such as in Pragmatically Organised Dynamic Display (PODD) communication books. Any vocabulary organisation needs to be well planned and used consistently to reduce the time required for the person to ‘search’ for the word they want.

**CORE VOCABULARY**

*The Basis of Interactive Communication*

Core vocabulary represents 80% of the words we use when speaking and consists of only about 200 words. The rest of the words we use (tens of thousands of them!) only account for 20% of total words communicated. They are referred to as fringe (or extended) vocabulary (Cannon & Edmond, 2009).

Consider the statement - *I want to go to the museum*. The only fringe vocabulary word in this statement is *museum*. The rest of the words are core vocabulary.

Children need access to both core and fringe vocabulary to effectively communicate. But, given that core vocabulary represents 80% of what we say, these words need to be accessed quickly and easily.

Core vocabulary is consistent across place, topic and cognitive ability. There have been a few studies on core vocabulary and you can find core vocabulary wordlists online.

Fringe vocabulary varies between individuals and environments and will often need to be personalised for the child (eg. people’s names, favourite TV characters).

See Appendix 4 for core vocabulary lists.
**Semantic Compaction Systems**

In this system one picture has many meanings and you sequence these pictures to make words.

Minspeak is the semantic compaction system commonly used in Australia. It has strategies and patterns to represent words that are not easy to represent in a picture.

Using a small set of pictures with endless combinations the vocabulary can be organised simply (without lots of levels/pages) and allows for vocabulary growth.

```
🍎 + 🍎 = eat
🍎 + 🍎 + 🍎 = hungry
🍎 + 🍎 + 🍎 = pear
🍎 + 🍎 + 🍎 = strawberry
🍎 + 🍎 + 🎈 = lemon
```

Sequencing pictures is more efficient than sequencing letters to form words. Three symbols are sequenced to make the word *hungry*, but six letters would need to be sequenced to spell the word. However, semantic compaction is not an obvious system and requires training, and is not supported by all communication devices.

**Alphabet Based Methods**

As this method implies, the AAC user spells words using the alphabet. Infinite vocabulary is available as long as the user can spell so there are no issues around representing core and fringe vocabulary. Communication devices may use the following alphabet techniques:

- **Word prediction**: the person starts to spell a word and the AAC system tries to guess which word is being spelled and provides a list of words from which to choose. If the word needed is on the list, the person can select it. If the word is not on the list, the person has to continue to spell.
- **Whole words**: the words are printed on the AAC display and available for selection.
- **Abbreviation-expansion**: simple 2 to 3 words abbreviations are created. When that abbreviation is typed or selected, the whole word or phrase that it represents is retrieved (eg. HAY = How are you?).

**KEY POINTS**

- Think about the different language representation methods when conducting your assessment and trials.
- Consider semantic compaction in your communication device trial if appropriate.
- Discuss the AAC team’s resources to potentially learn and support the language representation method/s considered.
- Ensure current AAC methods used by the child provide quick and easy access to core vocabulary.
The most conversationally powerful AAC systems use semantic compaction AND single meaning pictures or alphabet-based methods. By accessing core vocabulary via semantic compaction and fringe vocabulary via single meaning pictures and/or alphabet based systems the child can say whatever they want in the shortest amount of time.

Although the evidence points heavily to the use of semantic compaction as an efficient and effective way of representing language – especially core vocabulary – the following should be considered: semantic compaction needs to be taught. It is not an obvious system and those supporting the child will have to learn it. This will involve the time and effort of the AAC team members.

<table>
<thead>
<tr>
<th></th>
<th>Single Meaning Pictures</th>
<th>Semantic Compaction</th>
<th>Alphabet Based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Literacy required?</strong></td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Symbol sequences</strong></td>
<td>long</td>
<td>short</td>
<td>long</td>
</tr>
<tr>
<td><strong>Number of symbols</strong></td>
<td>large</td>
<td>small</td>
<td>small</td>
</tr>
<tr>
<td><strong>Better for core or fringe vocabulary</strong></td>
<td>fringe</td>
<td>core</td>
<td>both</td>
</tr>
</tbody>
</table>

(AAC Institute, n.d.)

<table>
<thead>
<tr>
<th></th>
<th>Single Meaning Pictures</th>
<th>Semantic Compaction</th>
<th>Alphabet Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy concept for adults to understand</td>
<td>•</td>
<td>•</td>
<td>Easy concept to understand for spellers and readers</td>
</tr>
<tr>
<td>Easy to use at first encounter</td>
<td>•</td>
<td>•</td>
<td>Potential for becoming automatic</td>
</tr>
<tr>
<td>Immediate feedback with one hit</td>
<td>•</td>
<td>•</td>
<td>Equal access to core and fringe vocabulary</td>
</tr>
<tr>
<td>Smooth transition from low tech communication board to voice output device</td>
<td>•</td>
<td>•</td>
<td>Smooth transition between low tech spelling boards and voice output devices</td>
</tr>
<tr>
<td>Many nouns can be represented directly with no training; supports fringe vocabulary representation and use</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small symbol set leads to single overlay (no navigating pages)</td>
<td>Rule driven</td>
<td>Easy concept to understand for spellers and readers</td>
</tr>
<tr>
<td></td>
<td>Promotes learning and use of core vocabulary</td>
<td>Potential for automaticity</td>
<td>Potential for becoming automatic</td>
</tr>
<tr>
<td></td>
<td>Rule driven</td>
<td>Does not require literacy skills</td>
<td>Equal access to core and fringe vocabulary</td>
</tr>
<tr>
<td></td>
<td>Potential for automaticity</td>
<td>Efficient method</td>
<td>Smooth transition between low tech spelling boards and voice output devices</td>
</tr>
</tbody>
</table>

(AAC Institute, n.d.)

**FIND OUT MORE**

Symbols - [http://www.widgit.com/symbols/about_symbols/what_are_symbols.htm](http://www.widgit.com/symbols/about_symbols/what_are_symbols.htm)

Visual Scene Displays – Another Option for Some AAC Users

A visual scene display (VSD) is a picture, photograph or virtual environment that represents a situation, place or experience. It shows people, actions and objects in a visually integrated image. Messages are accessed through the picture. For example:

- **Touching the oven speaks the message “What’s for dinner?”**
- **Touching the boy speaks “I'm hungry.”**

Research is only just emerging for VSD use with adults with language difficulties caused by damage to the brain, children with autism, and very young children with complex communication needs. However, many dynamic display communication devices now offer VSD set-ups.

The advantage of VSDs is that they provide a high level of contextual support and reduce the cognitive demands of learning symbol meanings and navigating through pages to find symbols. They capture events in a person’s life and allow the communication partner to participate more actively in the interaction (Blackstone, 2004).

**References**


**FIND OUT MORE**

Visual Scene Displays - [http://www.imakenews.com/aac-rerc/e_article000344804.cfm?x=b11,0,w](http://www.imakenews.com/aac-rerc/e_article000344804.cfm?x=b11,0,w)


This handout is part of an information package, funded by a NGCS grant, to assist local teams in supporting children who require augmentative and alternative communication - particularly communication devices. Augmentative and alternative communication, or AAC, refers to other methods of communication people may use when they have difficulty speaking. These methods may supplement what speech they do use or may become the primary form of communication in the absence of speech.

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