

A Comparison of Language Representation Methods

According to the AAC Institute Website (2009), proficient AAC users people report that the two most important things to them, relative to communication, are:

1. saying exactly what they want to say, and
2. saying it as quickly as possible.

Being able to say exactly what you want to say can be addressed by providing the person using the AAC system with a robust set of core vocabulary, necessary extended vocabulary, and all the bits and pieces need to produce intact syntax and morphology.

Being able to say whatever you want to say as quickly and efficiently as possible is highly depended on the Language Representation Methods (LRMs) used to represent that vocabulary.

Historically, the main three Language Representation Methods (LRM) available on an AAC device are (1) single meaning pictures (SMPs), (2) alphabet based methods (ABMs); and Minspeak®.

- **All AAC devices use one or more of these LRMs.**
- **All AAC devices DO NOT support all LRMs.**

Single Meaning Pictures

Single meaning pictures (SMP) are exactly as the name implies – a single picture is assigned a single meaning. Selecting the picture has the effect of communicating the corresponding word.

Photographs, sets of pictures available in the field of AAC, pictures harvested from the Internet, and self-drawn pictures are all examples of single meaning pictures. Single meaning pictures are often used on simple manual communication boards and on speech generating devices. They are often the first LRM of choice to represent people, places, and things – all which can often be used by the person with disabilities with little to no training.

Gail



home



doll







book



As easy as they might seem, three challenges of using single meaning pictures to represent real language are **Picture Production**, **Volume**, and **Organization**.

Picture Production: Single meaning pictures, which may be an obvious LRM for representing specific people, places, or things becomes a more challenging LRM when

trying to represent words that are not easily represented with a picture. These “hard to picture” words are called non-picture producers. Young children say words like “mine,” “help,” “up,” and “stop.” These four, important words are not picture producers. Some type of picture has to be developed that tries to capture the meaning and a common life experience behind the word.

mine	help	up	stop
			
The present is <i>mine</i> and I'm holding on to it.	Call an ambulance to get <i>help</i> !	The thumb and arrow are pointing <i>up</i> .	<i>Stop</i> the car at the stop sign.

The idea of SMPs being “easy” and “concrete” is quickly abandoned as soon as you try to communicate words that are non-picture producers.

Volume: If you have a vocabulary of 300 words – you need to learn 300 pictures. If you have a vocabulary of 1000 words, which is the vocabulary of a typically developing 3 year old – you need to learn 1000 pictures. The volume of pictures which need to be learned keeps growing and growing as the person’s vocabulary grows. Everyone word you want to say must be anticipated and programmed into the device.

Plus, the similarities that are part of these pictures makes the learning more and more challenging as the vocabulary volume grows. Consider these 5 simple words that are part of everyone’s language: I, me, my, myself, and mine.

*Here’s a little quiz - Can you tell which picture belongs with which word?

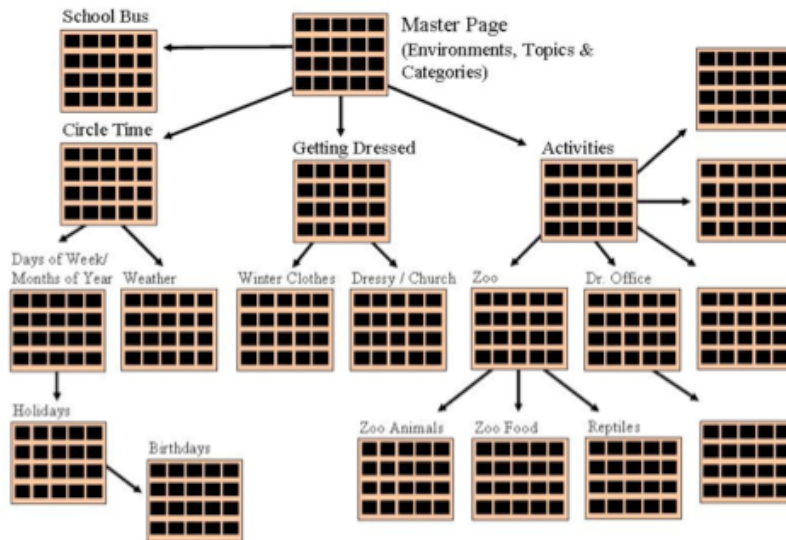


No matter how good the SMP, the similarities in these concepts always makes it a challenge to teach the pictures. And that challenge keeps growing and growing as the vocabulary volume grows.

(*The answer = mine, I, me, my, myself)

Organization: All vocabulary on an AAC system needs to be organized in some way so the person using it to talk can find it and use it. Single meaning pictures are often put into groups based on Part of Speech (e.g., question words), Category (e.g., clothing), or Activity (e.g., shopping). These groups of words might be arranged on a page or an activity row in the AAC device. Some groups might also be organized alphabetically.

Whatever approach is used, the system must be well planned out and consistently maintained in order to the person to find the words they need to talk. The following example shows a vocabulary of no more than 400 words that is organized across multiple pages.



Even the best organizational system of SMPs requires a person to learn the organizational system and then stop and look for the picture they need, usually reducing the person's ability to become automatic in use of the pages and pictures.

Alphabet Based Methods

Four methods are generally used with alphabet based methods: spelling, word prediction, whole words, and abbreviation-expansion.

- When depending on plain spelling to talk, the person has to spell out each and every letter for each and every word he/she wants to say.
- When depending on word prediction to talk, 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.
- When depending on the whole word method, the words are printed on the AAC display and available for selection.
- When depending on abbreviation-expansion (also called letter coding), 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.

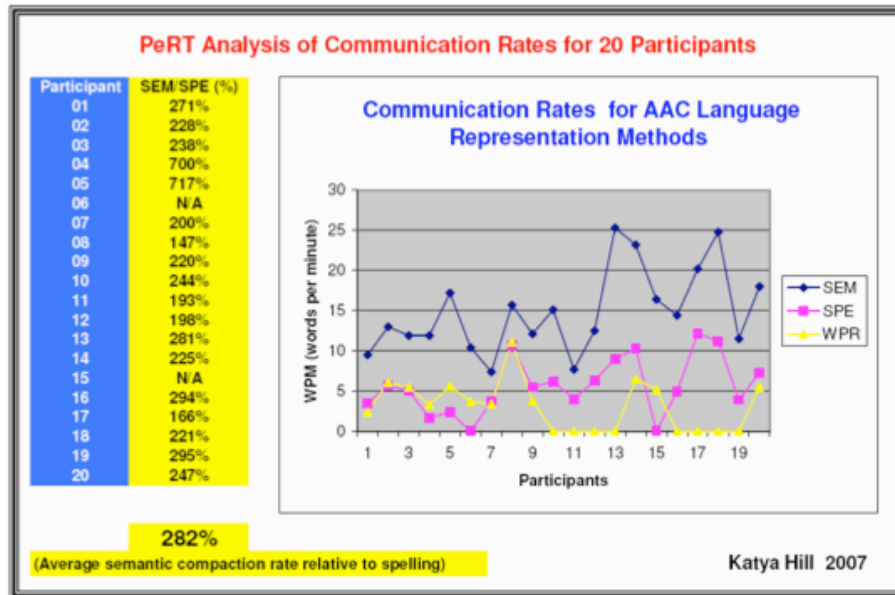
Spelling is a useful LRM because it allows the person with literacy skills to communicate any word he/she wants to say. That person is not dependent on someone having anticipated and pre-programmed those words in an AAC device. The flexibility of having access to 26 letters is a valuable LRM.

Spelling is also often used as a LRM when a person has literacy skills because it seems like an easy and fast way to communicate. However, spelling based methods of communicating are actually very slow ways to communicate. They are useful to

communicate a word every now and then, but as the primary LRM, they are not as time or energy efficient as Minspeak®.

The following data, as reported by the AAC Institute, shows the efficiency of Minspeak (referred to with the term *Semantic Compaction*) over spelling and word prediction.

Comparing the Speed of Spelling and Semantic Compaction



Minspeak®


Minspeak is the use of multiple meaning pictures in short sequences to represent vocabulary. Minspeak handles the challenges inherent in Single Meaning Pictures and the challenges inherent in Alphabet Based Methods.

- Picture Production: Minspeak provides strategies and patterns for representing words that are not Picture Producers.
- Volume: Minspeak provides strategies and patterns for a growing vocabulary.
- Organization: Minspeak provide strategies and patterns for simple vocabulary organization and automaticity in vocabulary retrieval.
- Rate of Communication: Minspeak icon sequences provide for faster communication than spelling based methods.

The following chart, as reported by the AAC Institute, compares Single Meaning Pictures, Alphabet Based Methods, and Minspeak (referred to with the term *Semantic Compaction*.)

Comparing and Using Multiple Language Representation Methods

- Matching the advantages and disadvantages to achieve highest performance

	Single Meaning Pictures	Alphabet-Based Methods	Semantic Compaction
Literacy required?	NO	YES	NO
Symbol Sequences	SHORT	LONG	SHORT
Symbol Set Size	LARGE	SMALL	SMALL
Better for Core or Extended Vocabulary	EXTENDED	EXTENDED	CORE
Promotes automaticity?	NO	YES	YES
Relative speed for core	*	1	2.8

* No research has compared long term speed of single meaning picture use.

Go to the AAC Website to download a tool that can help you explain the benefits and problems of the various LRMs.

<http://www.aac institute.org/Resources/ProductsandServices/ConsideringAACLRMs/index.html>

Conclusion

ALL language representation methods are possible for the individual using a Minspeak-based AAC device. The person can use the Power of Minspeak to communicate Core Vocabulary, the Simplicity of Single Meaning Pictures for words that are Picture Producers, and the Flexibility of Spelling Based Methods to say words that were not anticipated and pre-programmed in the AAC device.

By using Minspeak along with Single Meaning Pictures and Alphabet Based Methods, the goal of being able to **say anything you want as quickly as possible** is achievable for all AAC users.