Minspeak with Individuals with Developmental Disabilities

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Too often, when people think about Minspeak and individuals with developmental disabilities, they get distracted by common "*yes, but*" concerns.

- "**Yes**, I see how Minspeak systems can easily represent hundreds and hundreds of words, **but** the individuals I support are concrete. They need *repetition and routine* with simple words."

- "**Yes**, I see how Minspeak systems can easily help provide someone with the ability to build complete sentences, **but** the individuals I support can only talk with 1 or 2 or maybe 3 words."

- "**Yes**, I see how Minspeak can help people in classrooms, **but** the individuals I support participate mainly in *functional activities*."

- "**Yes**, Minspeak is great, **but** the individuals I support aren't ready for a device right now."

The power of Minspeak for individuals with developmental disabilities starts by understanding these concerns.

AAC Practices in Special Education Programs

An AAC and educational model frequently implemented with individuals with significant developmental disabilities involves use of a **functional** curriculum with an emphasis on **activity-based learning**.   A daily **routine** is established, which might start off with "circle time" or "morning opening time" and progress throughout the day to include a range of activities.   **Repetition** is part of the daily routine.

Functional activities for preschool and elementary level students might include stations where they work on early academics, with a functional twist. For example, the classroom might have a "Reading Corner" where students have access to storybooks and work on functional reading skills, such as reading their name, identifying community signs and symbols (women/men, exit) and recognizing safety words (stop, danger).   Classrooms with students with more significant cognitive disabilities might only be asked to attend to a story being read.

As students get older and there is more of a focus on transition into the adult world, functional activities generally fall into one of four domains (Gray1997):
1. domestic (e.g., laundry, bed making, meal preparation);

2. recreational/leisure (e.g., game playing, community activities);
3. vocational (e.g., janitorial skills, work site activities in the community); and
4. community (e.g., shopping, transportation).

To participate within a functional curriculum, students in special education classes are often provided with AAC devices that have potential to be programmed with thousands of words across multiple pages. Teachers or speech language therapists spend a significant amount of time programming vocabulary for the activities of the functional curriculum, frequently adding pages of vocabulary on nearly a daily basis. Much of this vocabulary will be used temporarily for a specific activity planned for that day or week. Often, the programming within the device begins to take on a life of its own, and the challenge of finding and using that vocabulary results in less, not more, self-selected communication by the student. The student becomes increasingly dependent on someone else to help find the new pages and use the vocabulary, defeating the initial purpose of the AAC device, which was to promote personal communication power. Everyone, including the student, is working harder and harder with decreasing benefits. A solution to his dilemma is to focus on a smaller set of high frequency, re-usable words. This is where the "**Doing More with Less**" approach is a powerful alternative.

Doing More with Less

The "Doing More with Less" approach is built on two fundamental principles: (1) the use of a small set of core vocabulary and (2) the use of language-friendly AAC system design.

Principle 1: Small Set of Core Vocabulary
The first principle of the "doing more with less" approach is that individuals with developmental disabilities can and should learn a small, well-chosen set of core vocabulary words. With a set of as few as 50 core words to as many as 350 core words, a person with developmental disabilities can communicate across a range of life activities.   A "middle-of-the-road" set of 150 core words can make quite a difference in the life of a person with significant language and cognitive challenges.

By defining this set of vocabulary and then using it over and over and over, you are building in the *repetition* and *routine* needed to help the person learn and use this vocabulary. Instead of using context-specific vocabulary (e.g., those specialized words I need for cooking, like *mixer*, *spatula*, or *oven*), you continue to use the same set of core words (e.g., general, non-context specific core words, such as *put, in, get, out, do, more, done, good, bad*.) When you talk with core words, you are able to direct the action of others (*do, put, get*) and comment (*good, bad*), instead of just naming things (*mixer, spatula*).

> The core words that are needed in a "more with less" approach are generally already part of a Minspeak Application Program (MAP).

All word-based MAPs provide a set of core words for all word classes: verbs, adjectives, adverbs, prepositions, determiners, interjections, interrogatives, conjunctions, determiners, and nouns.

These words were selected based on normal language development models, frequency of use word lists, and language samples of individuals who speak using AAC devices.

Any core words you need that are currently missing from a MAP can easily be added within the architecture of the program.

Custom programs can be developed when a MAP is not a good fit for a child or adult with developmental disabilities.
For a list of the critical core words, go to www.vantatenhove.com.

Principle 2: Language Friendly Design

The second principle is to organize these core words with a language-friendly AAC design. Language-friendly design supports motor learning and keeps core words easily accessible both physically (with the person's body) and cognitively (with the person's brain). Historically, the "friendliest" design for accessing language gives the person core words on a single overlay or display (Vicker, 1974). Additional words can be placed on supplemental displays, for those intermittent and temporary times when they are needed.

Minspeak systems that provide single words and phrases are generally designed with a single, main overlay or display. This main overlay/display is used to represent the core vocabulary in a Minspeak device. With minimal effort, a person learns the motor patterns and the Minspeak icon sequences to access the core vocabulary during any activity.

To this core vocabulary, activity-specific vocabulary is provided. These context-specific words are not ignored or viewed as "bad words," rather; they are put in their proper place – as supplemental to the core words. The core words are the stars of Minspeak systems, just as they are the stars in the language performance of anyone who speaks.

Functional Activities and Minspeak Systems

Functional activities can still be a feature of AAC programming with individuals with developmental disabilities. It is still important to be working on activities that support the person's ability to function in the classroom, at home, and in the community. However, to truly support independent function, the emphasis, during these functional activities, needs to be on use of core vocabulary instead of context-specific vocabulary, which is usually nouns.

The switch from talking with nouns to talking with core words requires a shifting in the interaction style of teachers, therapists, and family members.   Imagine a teacher or mother doing a functional cooking activity with a person using an AAC system.   In one interaction style, the adult is asking the AAC user to reference all the things in the activity. This is referred to as Referential Talking (Baker, 2007). In another interaction style, the AAC user is asked to direct the action, express opinions, and make comments. The adult is still teaching and directing the activity, but the Minspeak user is more of an active player in the interaction. This is referred to as Descriptive Talking (Baker, 2007).

Referential Talking	*Descriptive Talking*
Adult: *Today we are going to make brownies.*	Adult: *Today we are going to make brownies. I like them.* (Spoken while pointing to the pictures of *I* and **like** *on the AAC system*.)
Adult: *What ingredients do I need to get?*	Adult: *Who can tell me something about brownies?* Pause at least 10 seconds. (expectant delay) Second prompt = *Maybe you can tell me something about brownies with a describer word or an action word.* (Spoken while pointing at those groups of words on the AAC display.)
AAC User: brownie mix, egg, oil, mixer	AAC User: *good, like, eat*
Adult: *What do we need to get out of this cupboard to make them?*	Adult: *Yes, you like to eat them* (while pointing to the pictures of **you, like,** and **eat**.) Now, where are the things we need to make brownies? (while looking around room)
AAC User: *bowl, spoon, mixer*	User: *there, in that, look here*
Adult: *What do we need first?*	Adult: *Now we need to get some ingredients out of this zipped shopping bag.* (hand bag to AAC user) Second prompt: *That zipper is hard and you might need help.* (Spoken while pointing to the picture of **help**.)
AAC User: *bowl*	AAC User: *help, I get out, open it*
Adult: *What are we going to put in first?*	Adult: *I see we have brownie mix, eggs, oil, and some spaghetti sauce. I think I'll put in the spaghetti sauce first. What do you think of that?*
AAC User: *brownie mix*	AAC User: *wrong, not that, bad, don't do*

The Descriptive Talking approach focuses on core vocabulary, but also uses many teaching strategies commonly advocated when working with individuals with developmental disabilities:
• Motivating Activities (making brownies)
• Open-ended Questions (What do you think of that?)

- Range of /wh/ Questions (what, who, where)
- Aided Language Stimulation (pointing at Minspeak symbols while talking)
- Prompt Hierarchy (use of first and second prompt)
- Expectant Delay (wait 10 or more seconds)
- Sabotage (put things in zipped bag, leave ingredients in cupboard)
- Feigned Stupidity (try and put in the wrong ingredient)

Later in the day, the class is going to do an art project and a similar routine, with similar core words, is used. The next day, when they decide to make something different during cooking time, the same core words can be used again. The adult models 1, 2, or 3 core word combinations, and through repetition and routine, the individual with developmental disabilities begins to interact with 1, 2, or 3 core word combinations.   These repetitions are meaningful, frequent, and across partners and environments – which results in generalized language use. That is the essence of the "doing more with less" approach - you are doing more modeling and more talking with a small, but powerful set of words which results in the individual doing more talking and more interacting with a small, but powerful set of words!

Teaching Icons and Icon Sequences

Individuals with developmental disabilities generally have receptive and expressive language disabilities. Plus, it cannot be assumed that they have had similar life experiences to normally developing children and adults. Without these life experiences, the opportunity to learn language is limited.

To teach vocabulary in a Minspeak system, start with the following strategies:
- Teach new words in a meaningful context.
  - Use a "context" as reflected in the picture on the Minspeak overlay.
  - Do a range of hands-on and life experience activities that parallel the way that word is represented on the Minspeak overlay.
  - Use a variety of visual props, designed to match the icon on the Minspeak overlay.
- Provide a range of de-contextualization activities to expand the understanding of the word across a range of contexts (go = go in car, go in potty, go when turning something on, etc.)
- Implement visual masking of "distracting" keys on the Minspeak device, leaving only the targeted vocabulary available.
- Strengthen word class knowledge (e.g., verbs are Action Man words) by creating characters or other metaphors.
- Use music and other media to teach vocabulary and icon sequences.

Pixon Project Kit

Manual communication boards and environmental engineering materials are frequently used with individuals prior to getting and while using an AAC device. The Pixon Project Kit (Van Tatenhove, 2009) provides a set of manual communication boards, environmental engineering materials, and classroom resources that can be used prior to and during use of a Minspeak system. The pictures in the Pixon Project Kit are called Pixons. Pixons are single meaning pictures that reflect, in a one picture, the Minspeak icon sequence used to say that word.

As single meaning pictures, Pixons are a valuable ...
- strategy to help individuals with developmental disabilities who are struggling with icon sequencing and use of technology;
- teaching tool for learning Minspeak codes; and
- resource for maintaining consistency in AAC programming for anyone using a Minspeak system.

Summary

Individuals with developmental disabilities can and do use Minspeak systems successfully. It is the role of evaluation and support team members to approach the use of Minspeak with a "can do" attitude. Put away the "yes, but" excuses and give children and adults with developmental disabilities the opportunity to use Minspeak.

References

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