



The Story of Core

The NavBar and Master Page Pagesets in your Tobii Dynavox Compass software offer a new approach to core words based on current research. Let's take a look at how we got here.

Origins of Core Words

The foundation of research on language can be traced back before Socrates to the 5th century BC (Hickey, 2013). Don't worry, we won't go back that far in our exploration! Instead, let's start in 1921 when Edward Thorndike published, The Teacher's Word Book. In this volume, he provided "an alphabetical list of the 10,000 words which are found to occur most frequently" in American English writing for the purpose of assisting teachers in selecting words for literacy instruction (p. iii). Interestingly, Thorndike did not suggest that teachers rely on frequency alone to determine importance of words, but also indicated that "a word may be very important for a pupil or graduate to know and yet not figure largely in the world's reading" (p. iii-iv). This sounds like our modern idea of core words versus personal core words to me.

The study of frequency of use did not stop there. In 1967, "Computational Analysis of Present-Day American English" (known broadly as the Brown Corpus) was published (Francis & Kucera, 1967). This much-cited resource showed that "the", "of" and "to" comprised approximately 10% (Brown Corpus, n.d.) of the 1,014,312 words in the Corpus (Francis & Kucera, 1979). It is no wonder these are almost always among the words that appear in core word strategies.

Klare summed up the role of frequency pretty well in 1968 in writing, "... humans tend to use some words much more often than others..." (Dubay, 2004, p.12). That also explains why such words are included in the vocabulary of many augmentative and alternative communication (AAC) systems today.

Definitions

Core words are words that every communicator uses in every environment (Banajee, 2003).

Fringe words are words used in particular environments such as "fork" during meals and "weeds" when gardening.

Personal core refers to words that are used by a particular individual in every environment such as names, describing words, or even specific objects.

Core Word Strategy is the combination of core words and fringe words.

Let me give you an example.

"Chris, let's watch movies on TV."

Core Words – let's · watch · on

Personal Core – Chris

Fringe Words – movies · TV

Core Word Strategies in AAC

Frequency of use was reflected in early AAC primarily with the inclusion of written/typed single words such as days of the week, names of family members, etc., added to an alphabet display. However, the set of single words was often relatively small and the augmented communicator relied primarily on spelling for communication. This compromised broad use for those with limited literacy skills.

In 1971, a team led by Shirley McNaughton introduced **Blissymbolics** as a way to represent single words that individuals with physical disabilities could combine into sentences (Blissymbolics-Canada, n.d.). This research was conducted at Ontario Crippled Children's Centre, now Holland Bloorview Kids Rehabilitation Hospital.

The success of this approach spurred on the use of core words in AAC using Bliss Symbols and, for those who found Bliss too abstract, individually drawn line drawings and photographs. In the 1980s, several large sets of picture symbols were published, with Picture Communication Symbols (Johnson, 1981) emerging as the most widely used (Glennen & DeCoste, 1997).

For some today, the concept of core words is inextricably linked to color-coding and sentence-based word order (known as the modified Fitzgerald Key). Ms. McNaughton recalled that she and her team began to use **color coding** on their displays in 1972. Symbols were color-coded based on their part of speech (S. McNaughton, personal communication, March 29, 2011). She indicated that the modified Fitzgerald Key organization was applied upon learning of it from Eugene T. McDonald in approximately 1975 (S. McNaughton, personal communication, March 29, 2011).

What is the Fitzgerald Key? It is an organization of words in declarative sentence order developed by **Edith Fitzgerald** in 1929 as a means of teaching grammatical language to children who were deaf and hearing impaired. McDonald and Schultz suggested some modifications in their 1973 article and applied it to AAC (1973, p. 78-79). It has subsequently become the default layout for core words.

Since these beginnings, the use and study of core words in AAC has broadened. Core words have been included in communication books and boards as well as high-tech communication devices and, now, apps. We have seen studies focusing on what people say based on age (Banajee, 2003; Beukelman, Jones & Rowan, 1989; Holland, 1975; Lahey & Bloom, 1977), type of disability/diagnosis (Fried-Oken & Bardach, 2005; Holland, Halper, & Cherney, 2010), environment (Williams, Beukelman, & Ulman, 2012), and culture (Bornman & Bryen, 2013). These studies have expanded our knowledge of the words people use and how they are used, and informed the decision-making process we use in selecting words.

More about Blissymbolics:

Blissymbolics were developed by Charles Bliss in the 1940s as a writing strategy to cross language barriers, but they found their greatest application was in expanding the communication of individuals with communication impairments (Blissymbolics-Canada, n.d.).



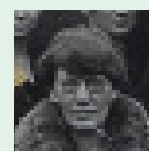
More about color coding:

Color coding by part-of-speech has been used for many years to help individuals locate core words faster by decreasing memory demands. Various color coding schemes are used around the country to this day. However, recent research has revealed some interesting information about color-coding in AAC. Thistle & Wilkinson (2012) reported that use of background color appears to offer "no advantage or distraction." Oxley & Norris (2000) indicated that children tend to rely on simple repetition (particularly in real life situations) to memorize messages in AAC more than organizational strategies.

How do we respond to this research? We may choose not to color code anymore or we may continue to do so. It seems to me that the important point to learn from this research is not to rely on color coding for teaching use of core words. Instead, we need to focus on strategies backed by evidence such as:

- *use in real life situations (e.g., activities in Core Word Lesson Plans - <https://mytobiidynavox.com/Resources/IdeasForTherapy>).*
- *partner augmented input/aided language stimulation (<http://www.dynavotech.com/implementation-toolkit/details.aspx?id=261>).*

More about Edith Fitzgerald:



Edith Fitzgerald (1877-1940), born hard of hearing and late-deafened, graduated as valedictorian from Gallaudet. Ms. Fitzgerald taught at a number of schools for the deaf and eventually became an

Assistant Principal. From its first printing in 1929, her "Key" (in Straight Language for the Deaf) influenced the language and communication of several generations of individuals with hearing impairments as well as those who use AAC (Gallaudet University Alumni Cards, n.d.; Hurwitz, 2007, p. 6).

Recent Developments in Core Words

In 2012, Karen Erickson and her team at the University of North Carolina at Chapel Hill reported that they had been exploring the “language of students in academic settings” which had previously not been done (Hatch, Erickson, Dennis, & Cummings, 2012). It was their purpose to:

...identify a comprehensive list of core vocabulary words, spanning grades K-12, which reflect the research in core vocabulary in AAC and the vocabulary that is needed to successfully communicate while in academic settings where the Common Core Essential Elements are being taught (DLM Professional Development Team, 2013, p.4).

This exciting research resulted in a suggested set of core words that heavily informed the content, layout and systematic growth of Core in your Compass software.

Tobii Dynavox Core

Tobii Dynavox Core is:

- founded on previous research into core words
- heavily informed by state-of-the art findings
- systematically expanded
- part of Tobii Dynavox's Core Word Strategy, along with the fringe vocabulary found in Word Lists and the Keyboard
- supported by lesson plans

As you can see, Tobii Dynavox has taken what we have known about core words for years and mixed in new research, steps for growth, and practical teaching strategies to create the exciting new solution called Core.

More about Dynamic Learning Maps Core Vocabulary:

This team of researchers lead by Karen Erickson began their quest by reviewing the research related to AAC core and vocabulary lists from school districts, AAC specialists and commercially available AAC systems. Words were analyzed based on frequency and breadth of use in elementary school written texts and within the Common Core State Standards for English Language Arts and Mathematics. A weighting and ranking process followed, resulting in the suggested set of required words as well as their systematic introduction in prioritized groups (DLM Professional Development Team, 2013; Hatch et al., 2012).

References

- Banajee, M., Dicarlo, C., & Stricklin, S. (2003). Core vocabulary determination for toddlers. *Augmentative and Alternative Communication*, 67-73.
- Beukelman, D., Jones, R. & Rowan, M. (1989). Frequency of word usage by nondisabled peers in integrated preschool classrooms. *Augmentative and Alternative Communication*, 5, 243 – 248.
- Blissymbolics-Canada. (n.d.). *Charles Bliss*. http://www.blissymbolics.ca/charles_bliss.html
- Blissymbolics-Canada. (n.d.). *The Bliss idea*. http://www.blissymbolics.ca/bliss_idea.html
- Blissymbolics Communication International. (n.d.). *About Blissymbolics*. Retrieved from <http://www.blissymbolics.org/index.php/about-blissymbolics>
- Bornman, J. & Bryen, D.N. (2013). Social validation of vocabulary selection: Ensuring stakeholder relevance. *Augmentative and Alternative Communication*, 29:2, 174-181.
- *Brown corpus*. (n.d.) in Wikipedia.. Retrieved September 26, 2013, from http://en.wikipedia.org/wiki/Brown_Corpus
- DLM Professional Development Team. (2013). *The dynamic learning maps core vocabulary*. Retrieved from <http://www.med.unc.edu/ahs/clds/files/vocabulary-overview>,
- Gallaudet University Alumni Cards. (n.d.). *Edith Mansford Fitzgerald: B.A., 1903*. Retrieved from <http://www.aladin0.wrlc.org/gsd/cgi-bin/library?e=d-01000-00---off-0alumni-00-1--0-10-0---0---0prompt-10---4-----0-1--11-en-50---20-help---01-3-1-00-0-0-11-0-0utfZz-8-00&a=d&cl=CL3.26&d=HASH010f3ff1208d7658f29b2863>
- DuBay, W.H. (2004). *The Principles of Readability*. Retrieved from <http://www.nald.ca/library/research/readab/readab.pdf>
- Fitzgerald, E., (1969). *Straight Language for the Deaf*. (Original copyright1949). Volta Bureau, Washington, D.C.
- Francis, W.N. & Kucera, H. (1967). *Computational Analysis of Present-Day American English*. Providence, RI: Brown University.
- Francis, W.N. & Kucera, H. (1979). *Brown corpus manual*. Providence, RI: Brown University. Retrieved from <http://icame.uib.no/brown/bcm.html>
- Fried-Oken, M. & Bardach, L. (2005). *End-of-life issues for people who use AAC*. *Augmentative and Alternative Communication*, 14:3, 15-19.
- Glennen, S.L., & DeCoste, D.C. (1997). *Handbook of augmentative and alternative communication*. San Diego: Singular.
- Hatch, P., Erickson, K., Dennis, A., & Cummings, M. (2012). *A core issue: A core vocabulary for the Common Core*. Retrieved from <http://www.med.unc.edu/ahs/clds/files/conference-hand-outs/ASHA2012CoreVocabularyPost.pdf>
- Hickey, R. (2013). *History of linguistics*. Essen: Universitat Duisburg-Essen.. Retrieved from http://www.uni-due.de/ELE/TL_HistoryOfLinguistics.htm <http://www.nald.ca/library/research/readab/13.htm>
- Holland, A. (1975). Language therapy for children: Some thoughts on context and content. *Journal of Speech and Hearing Disorders*, 40, 514-523.
- Holland, A.L., Halper, A.S., & Cherney, L.R. (2010). Tell me your story: Analysis of script topics selected by persons with aphasia. *American Journal of Speech-Language Pathology*, 19, 198-203.
- Hurwitz, V. T. (2007). *Late-deafened women who beat the odds: If only I knew!*. Retrieved from http://www.alda.org/pdfs/aldacon07/ALDAcon2007-Proceedings-VHURWITZ-Late_deafened_women_who_beat_the_odds.pdf
- Johnson, R.M. (1981). *The picture communication symbols*. Solana Beach, CA: Mayer-Johnson Inc.
- Lahey, M. & Bloom, L. (1977). Planning a first lexicon: Which words to teach first. *Journal of Speech and Hearing Disorders*, 42, 340 – 349.
- McDonald, E.T. & Schultz, A.R. (1973). Communication boards for cerebral-palsied children. *Journal of Speech and Hearing Disorders*, 38, 73-88.
- Oxley, J.D. & Norris, J.A. (2000). Children's use of memory strategies: Relevance to voice output communication aid use. *Augmentative and Alternative Communication*, 16:2, 79-94.
- Thistle, J.J. & Wilkinson, K.M. (2012). What are the attention demands of aided AAC? *Perspectives on Augmentative and Alternative Communication*, 21, 17-22.
- Thorndike, E.L. (1921). *The teacher's word book*. New York City: Teachers College, Columbia University. Retrieved from <http://archive.org/stream/teacherswordbook00thoruoft#page/n5/mode/2up>
- Williams, M., Beukelman, D., & Ullman, C. (2012). AAC text messaging. *Perspectives on Augmentative and Alternative Communication*, 21, 56-59

Copyright notification: User may not copy or distribute these materials except for use with the students, patients, clients, or other individuals who receive instruction, therapy, supervision, assessment, care or other services directly from the user. Otherwise, these materials may not be copied without the written consent of Tobii Dynavox.